Changes for the Better

MITSUBISHI ELECTRIC

SPLIT-TYPE, AIR CONDITIONERS

May 2006

No. OC394

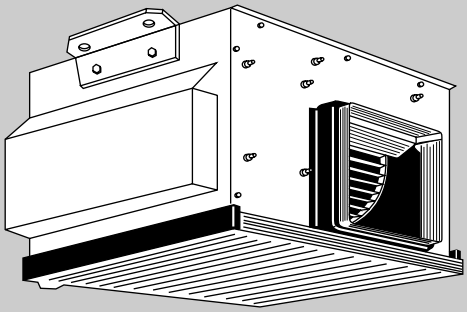
TECHNICAL & SERVICE MANUAL

Series PE Ceiling Concealed

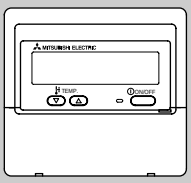
This manual does not cover outdoor units.
When servicing them, please refer to the service manual No. OC152, OC206, OC353 and this manual in a set.

<Indoor unit>

[Model names]	[Service Ref.]
PE-3EAK	PE-3EAK.TH PE-3EAK.TH-U
PE-4EAK	PE-4EAK.TH PE-4EAK.TH-U
PE-5EAK	PE-5EAK.TH PE-5EAK.TH-U
PE-6EAK	PE-6EAK.TH PE-6EAK.TH-U



Indoor unit



Remote controller

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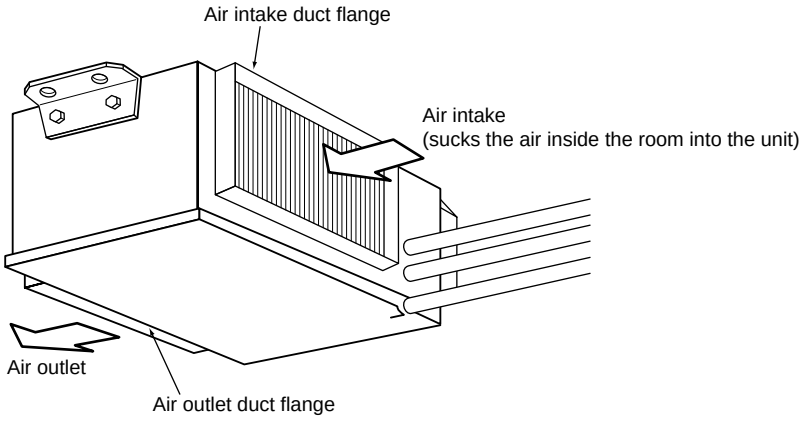
NOTE:
- This service manual describes technical data of indoor units.
- RoHS compliant products have <G> mark on the spec name plate.

Mr.SLIM™

1 PART NAMES AND FUNCTIONS

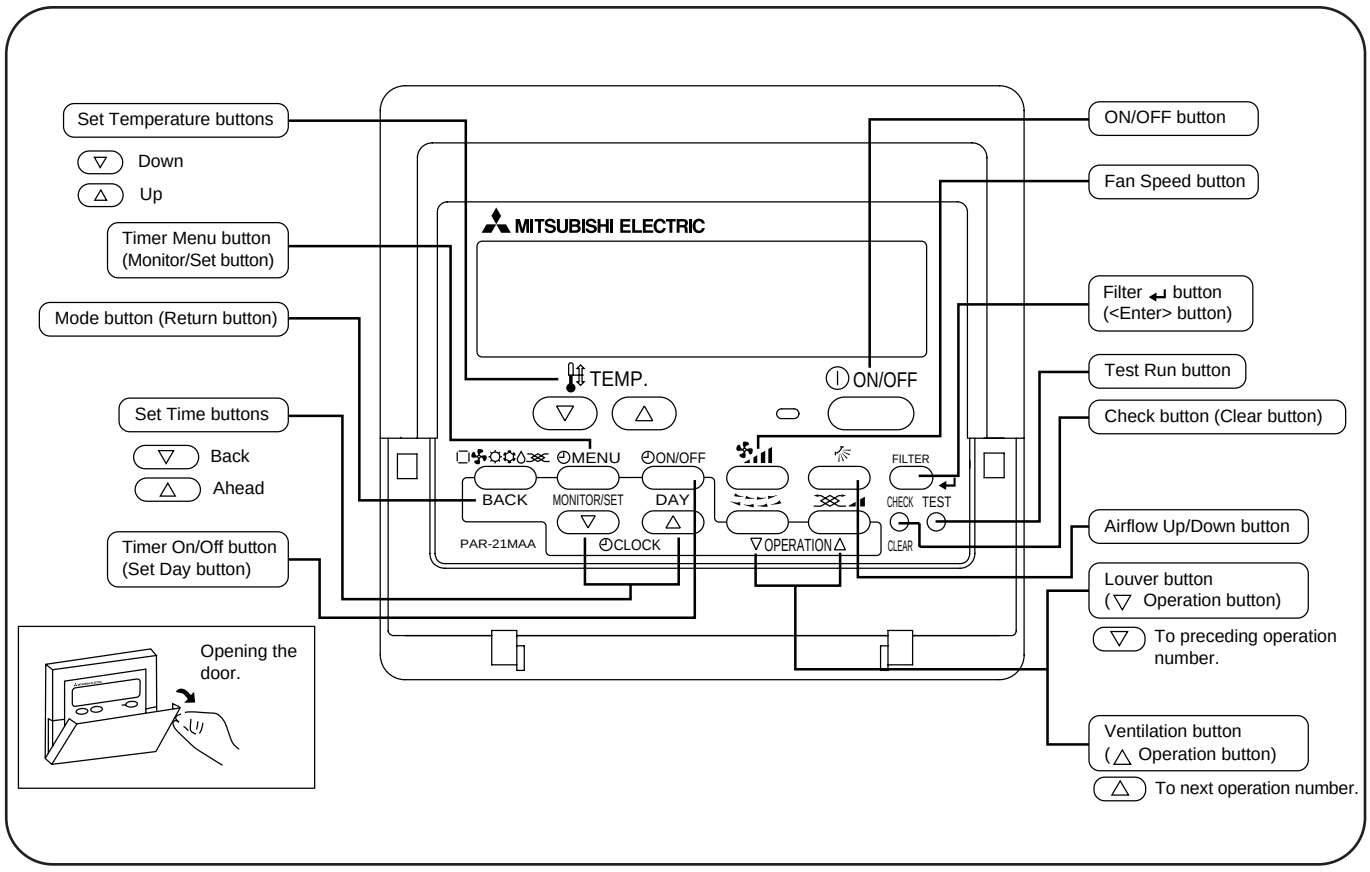
● Indoor (Main) Unit



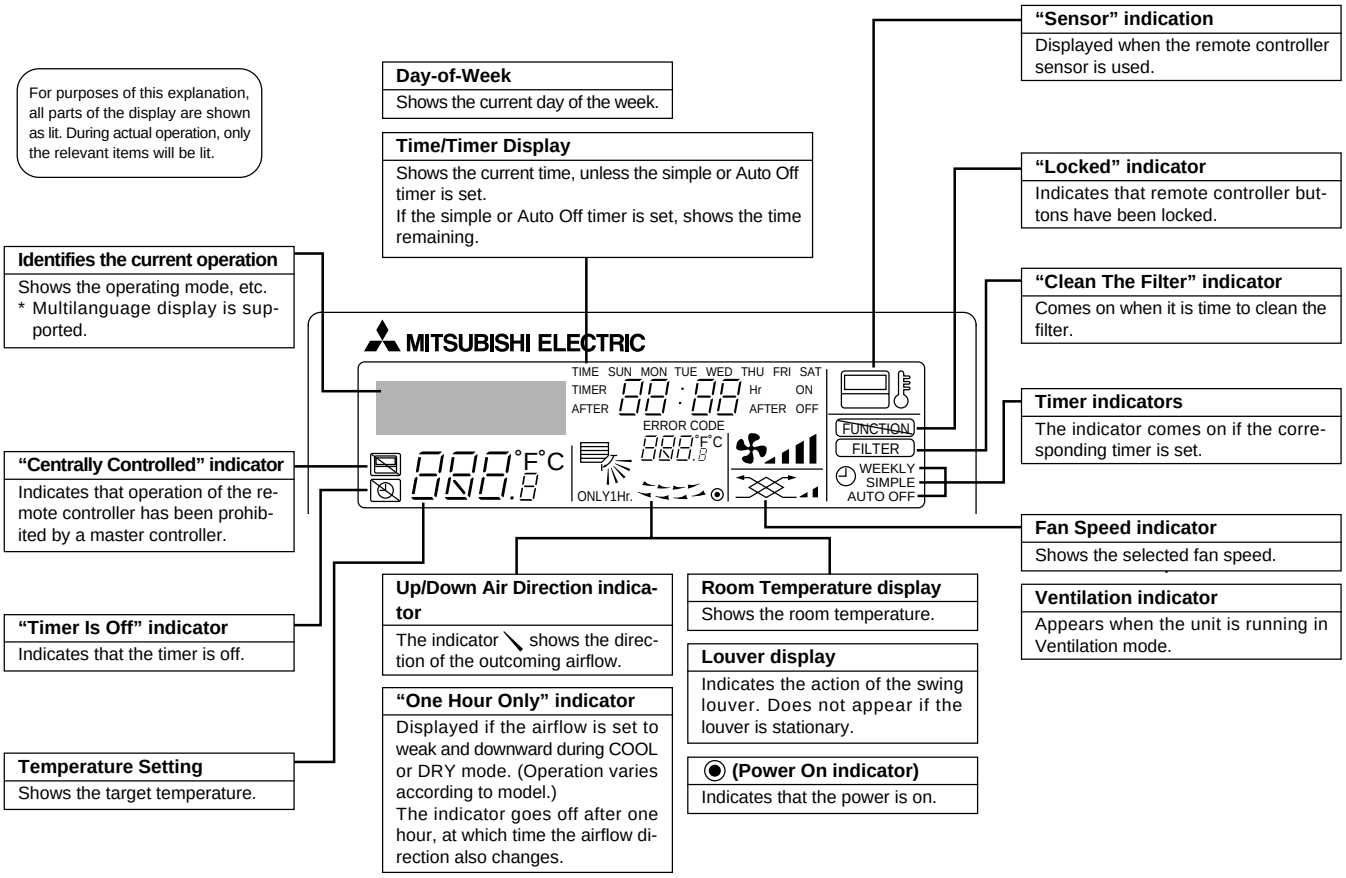
● Remote controller

Once the controls are set, the same operation mode can be repeated by simply pressing the ON/OFF button.

● Operation buttons



● Display


For purposes of this explanation, all parts of the display are shown as lit. During actual operation, only the relevant items will be lit.
Day-of-Week
Shows the current day of the week.
Time/Timer Display
Shows the current time, unless the simple or Auto Off timer is set.
If the simple or Auto Off timer is set, shows the time remaining.
"Sensor" indication
Displayed when the remote controller sensor is used.
"Locked" indicator
Indicates that remote controller buttons have been locked.
"Clean The Filter" indicator
Comes on when it is time to clean the filter.
Timer indicators
The indicator comes on if the corresponding timer is set.
Identifies the current operation
Shows the operating mode, etc.
* Multilanguage display is supported.
"Centrally Controlled" indicator
Indicates that operation of the remote controller has been prohibited by a master controller.
"Timer Is Off" indicator
Indicates that the timer is off.
Temperature Setting
Shows the target temperature.
MITSUBISHI ELECTRIC
TIME SUN MON TUE WED THU FRI SAT
TIMER
AFTER
Hr
ON
AFTER OFF
ERROR CODE
FUNCTION
FILTER
WEEKLY
SIMPLE
AUTO OFF
ONLY1Hr.
Up/Down Air Direction indicator
The indicator shows the direction of the outcoming airflow.
"One Hour Only" indicator
Displayed if the airflow is set to weak and downward during COOL or DRY mode. (Operation varies according to model.)
The indicator goes off after one hour, at which time the airflow direction also changes.
Room Temperature display
Shows the room temperature.
Louver display
Indicates the action of the swing louver. Does not appear if the louver is stationary.
(Power On indicator)
Indicates that the power is on.
Fan Speed indicator
Shows the selected fan speed.
Ventilation indicator
Appears when the unit is running in Ventilation mode.

Caution

- Only the Power on indicator lights when the unit is stopped and power supplied to the unit.
- If you press a button for a feature that is not installed at the indoor unit, the remote controller will display the "Not Available" message.
  If you are using the remote controller to drive multiple indoor units, this message will appear only if he feature is not present at the parent unit.
- When power is turned ON for the first time, it is normal that "PLEASE WAIT" is displayed on the room temperature indication (For max. 2minutes). Please wait until this "PLEASE WAIT" indication disappear then start the operation.

2 SPECIFICATIONS

2-1 STANDARD SPECIFICATIONS

Item			Service Ref.	PE-3EAK.TH(-U)	PE-4EAK.TH(-U)
Cooling capacity ※1		50Hz	W	7,500	9,800
			Btu/h	25,600	33,400
		60Hz	W	8,100	10,900
			Btu/h	27,600	37,200
Cooling capacity ※2		60Hz	W	6,700	9,400
			Btu/h	23,000	32,000
Total input (50/60Hz) ※3			kW	3.41 / 3.76	3.59 / 4.69
INDOOR UNIT	**Service Ref.**			**PE-3EAK.TH(-U)**	**PE-4EAK.TH(-U)**
	External finish			Galvanized sheets	
	Fan motor output		kW	0.2	0.3
	Airflow Low - High	50Hz	m^3/min	19 - 22	27 - 34
			CFM	671 - 777	953 - 1,200
		60Hz	m^3/min	22 - 26	27 - 34
			CFM	777 - 918	953 - 1,200
	Ex. static pressure at Hi - notch	50Hz	Pa (mmAq)	49 (5)	62 (6.35)
		60Hz	Pa (mmAq)	69 (7)	62 (6.35)
	Operation control & thermostat			Remote controller & built-in	
	Noise level Low - High ※5	50Hz	dB	46 - 48	54 - 58
		60Hz	dB	48 - 50	54 - 58
	Unit drain thread		in.	R1	R1
	Dimensions	W	mm (in.)	785 (31)	1,055 (41-1/2)
		D	mm (in.)	690 (27-1/6)	690 (27-1/6)
		H	mm (in.)	428 (16-7/8)	428 (16-7/8)
	Weight		kg (lbs)	46 (101)	58 (128)
OUTDOOR UNIT	**Service Ref.**			**PU-3VJC$_1$.TH, 3YJC.TH, 3NJA.TH**	**※7 PU-4JSA type**
	External finish			Munsell 3.0Y 7.8/1.1	
	Refrigerant (R-22) control			Capillary tube	
	Compressor output		kW	(V)2.2 (Y)2.4 (N)2.2	(V, Y, T)2.7
	Protection devices			※6	※6
	Crankcase heater ※4	50/60Hz	W	32 / 38	32 / 38
	Fan motor output		kW	0.085	0.065 + 0.065
	Airflow	50Hz	m^3/min(CFM)	50 (1,765)	95 (3,352)
		60Hz	m^3/min(CFM)	50 (1,765)	95 (3,352)
	Noise level ※5	50/60Hz	dB	52 / 53	54 / 55
	Dimensions	W	mm (in.)	870 (34-1/4)	
		D	mm (in.)	295 + 24 (11-5/8 add 1)	
		H	mm (in.)	850 (33-7/16)	1,258 (49-1/2)
	Weight		kg (lbs)	73 (161)	94 (207)

NOTE : ※1 Rating conditions (JIS B 8616)
Indoor : D.B. 27°C (80°F), W.B. 19°C (86°F)
Outdoor : D.B. 35°C (95°F), W.B. 24°C (75°F)

NOTE : ※2 Rating conditions (SSA 385, 386)
Indoor : D.B. 29°C (84°F), W.B. 19°C (86°F)
Outdoor : D.B. 46°C (115°F), W.B. 24°C (75°F)

NOTE : ※3 Total input based on indicated voltage.

(Indoor / Outdoor)

Service Ref.	PE - 3EAK.TH(-U)	PE - 4EAK.TH(-U)
50Hz	1ph. 220V / 1ph. 220V, 3ph. 380V	1ph. 220V / 3ph. 380V
60Hz	1ph. 220V / 1.ph 220V	1ph. 220V / 3ph. 220V

Rating conditions (JIS B 8616)

NOTE : ※4 Capacity of crankcase heater (W) based on 220 volts.

NOTE : ※5 Noise level is measured in an unacoustic room based on JIS conditions.

NOTE : ※6 V , N ···Inner thermostat, HP switch, LP switch
VL ···Inner thermostat, HP switch, LP switch, thermal switch.
T, Y···Thermal switch, Reversed - phase protector, HP switch, LP switch

NOTE : ※7 PU-4JSA type···PU-4VLJSA$_2$.TH, 4YJSA$_1$.TH, 4TJSA.TH

Item / Service Ref.				PE-5EAK.TH(-U)	PE-6EAK.TH(-U)
Cooling capacity ※1		50Hz	W	12,100	14,000
			Btu/h	41,300	47,800
		60Hz	W	13,500	15,200
			Btu/h	46,100	51,900
Cooling capacity ※2		60Hz	W	11,000	13,400
			Btu/h	37,500	45,700
Total input (50/60Hz) ※3			kW	5.10 / 6.06	5.65 / 6.58
INDOOR UNIT	**Service Ref.**			**PE-5EAK.TH(-U)**	**PE-6EAK.TH(-U)**
	External finish			Galvanized sheets	
	Fan motor output		kW	0.4	0.4
	Airflow Low - High	50Hz	m^3/min	34 - 42	34 - 42
			CFM	1,200 - 1,482	1,200 - 1,482
		60Hz	m^3/min	34 - 42	34 - 42
			CFM	1,200 - 1,482	1,200 - 1,482
	Ex. static pressure at Hi - notch	50Hz	Pa (mmAq)	62 (6.35)	62 (6.35)
		60Hz	Pa (mmAq)	62 (6.35)	62 (6.35)
	Operation control & thermostat			Remote controller & built-in	
	Noise level Low - High ※5	50Hz	dB	54 - 58	54 - 58
		60Hz	dB	54 - 58	54 - 58
	Unit drain thread		in.	R1	R1
	Dimensions	W	mm (in.)	1,255 (49-7/16)	1,255 (49-7/16)
		D	mm (in.)	690 (27-1/6)	690 (27-1/6)
		H	mm (in.)	428 (16-7/8)	428 (16-7/8)
	Weight		kg (lbs)	72 (159)	72 (159)
OUTDOOR UNIT	**Service Ref.**			**PU-5YJSA$_1$.TH, PU-5TJSA.TH**	**PU-6YJSA$_1$.TH, PU-6TJSA.TH**
	External finish			Munsell 3.0Y 7.8/1.1	
	Refrigerant (R-22) control			Capillary tube	
	Compressor output		kW	3.5	4.2/4.0
	Protection devices			※6	※6
	Crankcase heater	50/60Hz	W	–	–
	Fan motor output		kW	0.10 + 0.10	0.10 + 0.10
	Airflow	50Hz	m^3/min(CFM)	100(3,530)	100(3,530)
		60Hz	m^3/min(CFM)	100(3,530)	100(3,530)
	Noise level ※5	50/60Hz	dB	55	56
	Dimensions	W	mm (in.)	970 (38-3/16)	970 (38-3/16)
		D	mm (in.)	345 + 24 (13-9/16 add 1)	
		H	mm (in.)	1,258 (49-1/2)	1,258 (49-1/2)
	Weight		kg (lbs)	114 (282)	117 (313)

NOTE : ※1 Rating conditions (JIS B 8616)
Indoor : D.B. 27°C (80°F), W.B. 19°C (86°F)
Outdoor : D.B. 35°C (95°F), W.B. 24°C (75°F)
NOTE : ※2 Rating conditions (SSA 385, 386)
Indoor : D.B. 29°C (84°F), W.B. 19°C (86°F)
Outdoor : D.B. 46°C (115°F), W.B. 24°C (75°F)
NOTE : ※3 Total input based on indicated voltage.

(Indoor / Outdoor)

Service Ref.	PE-5/6EAK.TH(-U)
50Hz	1ph. 220V / 3ph. 380V
60Hz	1ph. 220V / 3ph. 220V

Rating conditions (JIS B 8616)
NOTE : ※4 Capacity of crankcase heater (W) based on 220 volts.
NOTE : ※5 Noise level is measured in an unacoustic room based on JIS conditions.
NOTE : ※6 Y : Inner thermostat, HP switch, Thermal switch
T : Inner thermostat, HP switch, LP switch, Thermal switch

2-2. POWER SUPPLY & MODEL NAMES

Power supply		Service Ref.(Indoor unit)	Service Ref.(Outdoor unit)			
			PE - 3EAK.TH(-U)	**PE - 4EAK.TH(-U)**	**PE - 5EAK.TH(-U)**	**PE - 6EAK.TH(-U)**
50Hz	1ph.	220, 230, 240V	PU-3VJC$_1$.TH	PU-4VLJSA$_2$.TH	—	—
	3ph.	380/220, 400/230, 415/240V	PU-3YJC.TH	PU-4YJSA$_1$.TH	PU-5YJSA$_1$.TH	PU-6YJSA$_1$.TH
60Hz	1ph.	220V	PU-3NJA.TH	—	—	—
	3ph.	220V	—	PU-4TJSA.TH	PU-5TJSA.TH	PU-6TJSA.TH

NOTE : 1. Power supply key N ·····1ph, 220V, 60Hz
V (L) ···1ph, 220, 230, 240V, 50Hz Y ··· 3ph, 380 / 220, 400 / 230,
T ·····3ph, 220V, 60Hz 415 / 240V, 50Hz, 4wires
2. Primary power supplies for all indoor units are single - phase.

2-3. ELECTRICAL SPECIFICATIONS

Rating conditions ——— JIS B 8616
Indoor : D.B. 27°C (80°F), W.B. 19°C (66°F)
Outdoor : D.B. 35°C (95°F), W.B. 24°C (75°F)

Series PE Indoor Unit (Single Phase)

Power supply (1 phase)		V : 220V 50Hz		V : 230V 50Hz		V : 240V 50Hz		N : 220V 60Hz	
Service Ref.		**PE-3EAK.TH** **PE-3EAK.TH-U**	**PE-4EAK.TH** **PE-4EAK.TH-U**	**PE-3EAK.TH** **PE-3EAK.TH-U**	**PE-4EAK.TH** **PE-4EAK.TH-U**	**PE-3EAK.TH** **PE-3EAK.TH-U**	**PE-4EAK.TH** **PE-4EAK.TH-U**	**PE-3EAK.TH** **PE-3EAK.TH-U**	**PE-4EAK.TH** **PE-4EAK.TH-U**
Current	A	1.07	1.41	1.07	1.40	1.07	1.39	1.47	1.95
Input	kW	0.23	0.30	0.24	0.31	0.25	0.32	0.32	0.42
Starting current	A	2.4	2.6	2.5	2.6	2.6	2.6	2.1	2.6
Outdoor unit		PU-3	PU-4	PU-3	PU-4	PU-3	PU-4	PU-3	PU-4

Power supply (1 phase)		Y : 220V 50Hz		Y : 230V 50Hz		Y : 240V 50Hz		T : 220V 60Hz	
Service Ref.		**PE-5EAK.TH** **PE-5EAK.TH-U**	**PE-6EAK.TH** **PE-6EAK.TH-U**	**PE-5EAK.TH** **PE-5EAK.TH-U**	**PE-6EAK.TH** **PE-6EAK.TH-U**	**PE-5EAK.TH** **PE-5EAK.TH-U**	**PE-6EAK.TH** **PE-6EAK.TH-U**	**PE-5EAK.TH** **PE-5EAK.TH-U**	**PE-6EAK.TH** **PE-6EAK.TH-U**
Current	A	2.50	2.50	2.53	2.53	2.58	2.58	1.99	1.99
Input	kW	0.54	0.54	0.57	0.57	0.60	0.60	0.43	0.43
Starting current	A	4.1	4.1	4.1	4.1	4.1	4.1	3.1	3.1
Outdoor unit		PU-5	PU-6	PU-5	PU-6	PU-5	PU-6	PU-5	PU-6

3 DATA

3-1. PERFORMANCE DATA

Cooling capacity 50Hz

Service Ref.			PE-3EAK.TH(-U)		PE-4EAK.TH(-U)	
Temperature			T.C.	C.F. (T.I.)	T.C.	C.F. (T.I.)
Outdoor D.B.	Indoor D.B.					
21°C (69.8°F)	16°C	(60.8°F)	7.5	0.81	9.8	0.81
	18°C	(64.4°F)	8.0	0.82	10.5	0.82
	19°C	(66.2°F)	8.3	0.83	10.8	0.83
	19.4°C	(67°F)	8.4	0.83	10.9	0.83
	20°C	(68°F)	8.5	0.84	11.1	0.84
	22°C	(71.6°F)	9.0	0.86	11.8	0.86
25°C (77°F)	16°C	(60.8°F)	7.4	0.84	9.6	0.84
	18°C	(64.4°F)	7.8	0.85	10.2	0.85
	19°C	(66.2°F)	8.1	0.86	10.6	0.86
	19.4°C	(67°F)	8.2	0.86	10.7	0.86
	20°C	(68°F)	8.4	0.87	10.9	0.87
	22°C	(71.6°F)	8.9	0.89	11.6	0.89
30°C (86°F)	16°C	(60.8°F)	7.1	0.90	9.3	0.90
	18°C	(64.4°F)	7.6	0.92	9.9	0.92
	19°C	(66.2°F)	7.8	0.93	10.2	0.93
	19.4°C	(67°F)	7.9	0.93	10.3	0.93
	20°C	(68°F)	8.1	0.94	10.5	0.94
	22°C	(71.6°F)	8.6	0.96	11.2	0.96
32.2°C (90°F)	16°C	(60.8°F)	7.0	0.93	9.1	0.93
	18°C	(64.4°F)	7.4	0.95	9.7	0.95
	19°C	(66.2°F)	7.7	0.96	10.0	0.96
	19.4°C	(67°F)	7.8	0.97	10.2	0.97
	20°C	(68°F)	7.9	0.97	10.3	0.97
	22°C	(71.6°F)	8.4	0.99	11.0	0.99
35°C (95°F)	16°C	(60.8°F)	6.8	0.96	8.9	0.96
	18°C	(64.4°F)	7.3	0.99	9.5	0.99
	19°C	(66.2°F)	7.5	1.00	9.8	1.00
	19.4°C	(67°F)	7.6	1.00	10.1	1.00
	20°C	(68°F)	7.7	1.01	10.1	1.01
	22°C	(71.6°F)	8.3	1.04	10.8	1.04
40°C (104°F)	16°C	(60.8°F)	6.5	1.03	8.5	1.03
	18°C	(64.4°F)	6.9	1.06	9.1	1.06
	19°C	(66.2°F)	7.2	1.07	9.4	1.07
	19.4°C	(67°F)	7.3	1.08	9.5	1.08
	20°C	(68°F)	7.4	1.08	9.7	1.08
	22°C	(71.6°F)	7.9	1.11	10.3	1.11
40.6°C (105°F)	16°C	(60.8°F)	6.5	1.04	8.4	1.04
	18°C	(64.4°F)	6.9	1.06	9.0	1.06
	19°C	(66.2°F)	7.1	1.08	9.3	1.08
	19.4°C	(67°F)	7.2	1.08	9.5	1.08
	20°C	(68°F)	7.4	1.09	9.6	1.09
	22°C	(71.6°F)	7.9	1.12	10.3	1.12
45°C (113°F)	16°C	(60.8°F)	6.2	1.10	8.1	1.10
	18°C	(64.4°F)	6.6	1.12	8.6	1.12
	19°C	(66.2°F)	6.8	1.14	8.9	1.14
	19.4°C	(67°F)	6.9	1.15	9.1	1.15
	20°C	(68°F)	7.1	1.16	9.3	1.16
	22°C	(71.6°F)	7.6	1.20	9.9	1.20
46°C (115°F)	16°C	(60.8°F)	6.1	1.11	8.0	1.11
	18°C	(64.4°F)	6.5	1.14	8.6	1.14
	19°C	(66.2°F)	6.8	1.15	8.9	1.15
	19.4°C	(67°F)	6.9	1.16	9.0	1.16
	20°C	(68°F)	7.0	1.17	9.2	1.17
	22°C	(71.6°F)	7.5	1.21	9.8	1.21
50°C (122°F)	16°C	(60.8°F)	5.8	1.16	7.6	1.16
	18°C	(64.4°F)	6.3	1.19	8.2	1.19
	19°C	(66.2°F)	6.5	1.21	8.5	1.21
	19.4°C	(67°F)	6.6	1.22	8.6	1.22
	20°C	(68°F)	6.7	1.23	8.8	1.23
	22°C	(71.6°F)	7.2	1.28	9.4	1.28
52°C (125.5°F)	16°C	(60.8°F)	5.7	1.19	7.4	1.19
	18°C	(64.4°F)	6.1	1.22	8.0	1.22
	19°C	(66.2°F)	6.4	1.24	8.3	1.24
	19.4°C	(67°F)	6.5	1.25	8.4	1.25
	20°C	(68°F)	6.6	1.26	8.6	1.26
	22°C	(71.6°F)	7.1	1.31	9.2	1.31
Evaporator airflow (m^3/min)			22		34	
Bypass factors			0.26		0.21	
S.H.F. at rating conditions			0.72		0.76	

Notes :
1. T.C : Total capacity (× 10^3 W) ··· (Btu / h) ≒ (W) × 3.4, (kcal / h) = (W) × 0.86
   C.F (T.I.) : Correction factors of Total input (Indoor unit input + Outdoor unit input)
2. (°F) = 32 + 9 / 5 (°C)
3. Guaranteed operating range (cooling)
   Lower limit ... Indoor : D.B. 21°C (70°F), W.B. 15.5°C (60°F), Outdoor : D.B. 21°C (70°F)
   Upper limit ··· Indoor : D.B. 35°C (95°F), W.B. 22.5°C (72.5°F), Outdoor : D.B. 52°C (125.5°F)

※VL ··· Outdoor : D.B. 46°C (115°F)

Cooling capacity 50Hz

Service Ref.			PE-5EAK.TH(-U)		PE-6EAK.TH(-U)	
Temperature			T.C.	C.F. (T.I.)	T.C.	C.F. (T.I.)
Outdoor D.B.	Indoor D.B.					
21°C (69.8°F)	16°C	(60.8°F)	12.1	0.81	14.1	0.81
	18°C	(64.4°F)	12.9	0.82	15.0	0.82
	19°C	(66.2°F)	13.3	0.83	15.4	0.83
	19.4°C	(67°F)	13.5	0.83	15.6	0.83
	20°C	(68°F)	13.7	0.84	15.9	0.84
	22°C	(71.6°F)	14.6	0.86	16.8	0.86
25°C (77°F)	16°C	(60.8°F)	11.9	0.84	13.7	0.84
	18°C	(64.4°F)	12.7	0.85	14.6	0.85
	19°C	(66.2°F)	13.1	0.86	15.1	0.86
	19.4°C	(67°F)	13.2	0.86	15.3	0.86
	20°C	(68°F)	13.5	0.87	15.6	0.87
	22°C	(71.6°F)	14.3	0.89	16.6	0.89
30°C (86°F)	16°C	(60.8°F)	11.4	0.90	13.2	0.90
	18°C	(64.4°F)	12.2	0.92	14.1	0.92
	19°C	(66.2°F)	12.6	0.93	14.6	0.93
	19.4°C	(67°F)	12.8	0.93	14.8	0.93
	20°C	(68°F)	13.0	0.94	15.0	0.94
	22°C	(71.6°F)	13.8	0.96	16.0	0.96
32.2°C (90°F)	16°C	(60.8°F)	11.2	0.93	13.0	0.93
	18°C	(64.4°F)	12.0	0.95	13.9	0.95
	19°C	(66.2°F)	12.4	0.96	14.3	0.96
	19.4°C	(67°F)	12.5	0.97	14.5	0.97
	20°C	(68°F)	12.8	0.97	14.8	0.97
	22°C	(71.6°F)	13.6	0.99	15.7	0.99
35°C (95°F)	16°C	(60.8°F)	11.0	0.96	12.7	0.96
	18°C	(64.4°F)	11.7	0.99	13.5	0.99
	19°C	(66.2°F)	12.1	1.00	14.0	1.00
	19.4°C	(67°F)	12.3	1.00	14.2	1.00
	20°C	(68°F)	12.5	1.01	14.5	1.01
	22°C	(71.6°F)	13.3	1.04	15.4	1.04
40°C (104°F)	16°C	(60.8°F)	10.5	1.03	12.1	1.03
	18°C	(64.4°F)	11.2	1.06	13.0	1.06
	19°C	(66.2°F)	11.6	1.07	13.4	1.07
	19.4°C	(67°F)	11.7	1.08	13.6	1.08
	20°C	(68°F)	12.0	1.08	13.8	1.08
	22°C	(71.6°F)	12.8	1.11	14.8	1.11
40.6°C (105°F)	16°C	(60.8°F)	10.4	1.04	12.1	1.04
	18°C	(64.4°F)	11.1	1.06	12.9	1.06
	19°C	(66.2°F)	11.5	1.08	13.3	1.08
	19.4°C	(67°F)	11.7	1.08	13.5	1.08
	20°C	(68°F)	11.9	1.09	13.8	1.09
	22°C	(71.6°F)	12.7	1.12	14.7	1.12
45°C (113°F)	16°C	(60.8°F)	10.0	1.10	11.5	1.10
	18°C	(64.4°F)	10.7	1.12	12.4	1.12
	19°C	(66.2°F)	11.0	1.14	12.8	1.14
	19.4°C	(67°F)	11.2	1.15	13.0	1.15
	20°C	(68°F)	11.4	1.16	13.2	1.16
	22°C	(71.6°F)	12.2	1.20	14.1	1.20
46°C (115°F)	16°C	(60.8°F)	9.9	1.11	11.4	1.11
	18°C	(64.4°F)	10.6	1.14	12.2	1.14
	19°C	(66.2°F)	10.9	1.15	12.6	1.15
	19.4°C	(67°F)	11.0	1.16	12.7	1.16
	20°C	(68°F)	11.2	1.17	13.0	1.17
	22°C	(71.6°F)	12.1	1.21	14.0	1.21
50°C (122°F)	16°C	(60.8°F)	8.9	1.16	10.3	1.16
	18°C	(64.4°F)	9.6	1.19	11.1	1.19
	19°C	(66.2°F)	9.9	1.21	11.5	1.21
	19.4°C	(67°F)	10.0	1.22	11.6	1.22
	20°C	(68°F)	10.3	1.23	11.9	1.23
	22°C	(71.6°F)	10.6	1.28	12.3	1.28
52°C (125.5°F)	16°C	(60.8°F)	7.9	1.19	9.1	1.19
	18°C	(64.4°F)	8.5	1.22	9.8	1.22
	19°C	(66.2°F)	8.8	1.24	10.2	1.24
	19.4°C	(67°F)	8.9	1.25	10.3	1.25
	20°C	(68°F)	9.1	1.26	10.5	1.26
	22°C	(71.6°F)	9.4	1.31	10.9	1.31
Evaporator airflow (m^3/min)			42		42	
Bypass factors			0.18		0.16	
S.H.F. at rating conditions			0.82		0.77	

Notes : 1. T.C : Total capacity (× 10^3 W) ··· (Btu / h) ≒ (W) × 3.4, (kcal / h) = (W) × 0.86
C.F (T.I.) : Correction factors of Total input (Indoor unit input + Outdoor unit input)

2. (°F) = 32 + 9 / 5 (°C)

3. Guaranteed operating range (cooling)
- Lower limit ... Indoor : D.B. 21°C (70°F), W.B. 15.5°C (60°F), Outdoor : D.B. 21°C (70°F)
- Upper limit ··· Indoor : D.B. 35°C (95°F), W.B. 22.5°C (72.5°F), Outdoor : D.B. 52°C (125.5°F)

※VL ··· Outdoor : D.B. 46°C (115°F)

Cooling capacity 60Hz

Service Ref.			PE-3EAK.TH(-U)		PE-4EAK.TH(-U)	
Temperature			T.C.	C.F. (T.I.)	T.C.	C.F. (T.I.)
Outdoor D.B.	Indoor D.B.					
21°C (69.8°F)	16°C	(60.8°F)	8.1	0.81	10.9	0.81
	18°C	(64.4°F)	8.7	0.82	11.7	0.82
	19°C	(66.2°F)	8.9	0.83	12.0	0.83
	19.4°C	(67°F)	9.0	0.83	12.2	0.83
	20°C	(68°F)	9.2	0.84	12.4	0.84
	22°C	(71.6°F)	9.7	0.86	13.1	0.86
25°C (77°F)	16°C	(60.8°F)	7.9	0.84	10.7	0.84
	18°C	(64.4°F)	8.5	0.85	11.4	0.85
	19°C	(66.2°F)	8.7	0.86	11.8	0.86
	19.4°C	(67°F)	8.9	0.86	11.9	0.86
	20°C	(68°F)	9.0	0.87	12.1	0.87
	22°C	(71.6°F)	9.6	0.89	12.9	0.89
30°C (86°F)	16°C	(60.8°F)	7.7	0.90	10.3	0.90
	18°C	(64.4°F)	8.2	0.92	11.0	0.92
	19°C	(66.2°F)	8.4	0.93	11.3	0.93
	19.4°C	(67°F)	8.5	0.93	11.5	0.93
	20°C	(68°F)	8.7	0.94	11.7	0.94
	22°C	(71.6°F)	9.3	0.96	12.5	0.96
32.2°C (90°F)	16°C	(60.8°F)	7.5	0.93	10.1	0.95
	18°C	(64.4°F)	8.0	0.95	10.8	0.96
	19°C	(66.2°F)	8.3	0.96	11.2	0.97
	19.4°C	(67°F)	8.4	0.97	11.3	0.97
	20°C	(68°F)	8.6	0.97	11.5	1.00
	22°C	(71.6°F)	9.1	0.99	12.3	0.99
35°C (95°F)	16°C	(60.8°F)	7.3	0.96	9.9	0.96
	18°C	(64.4°F)	7.8	0.99	10.5	0.99
	19°C	(66.2°F)	8.1	1.00	10.9	1.00
	19.4°C	(67°F)	8.2	1.00	11.0	1.00
	20°C	(68°F)	8.4	1.01	11.3	1.01
	22°C	(71.6°F)	8.9	1.04	12.0	1.04
40°C (104°F)	16°C	(60.8°F)	7.0	1.03	9.4	1.03
	18°C	(64.4°F)	7.5	1.06	10.1	1.06
	19°C	(66.2°F)	7.8	1.07	10.4	1.07
	19.4°C	(67°F)	7.9	1.08	10.6	1.08
	20°C	(68°F)	8.0	1.08	10.8	1.08
	22°C	(71.6°F)	8.5	1.11	11.5	1.11
40.6°C (105°F)	16°C	(60.8°F)	7.0	1.04	9.4	1.04
	18°C	(64.4°F)	7.5	1.06	10.0	1.06
	19°C	(66.2°F)	7.8	1.08	10.4	1.08
	19.4°C	(67°F)	7.9	1.08	10.5	1.08
	20°C	(68°F)	8.0	1.09	10.7	1.09
	22°C	(71.6°F)	8.5	1.12	11.4	1.12
45°C (113°F)	16°C	(60.8°F)	6.7	1.10	9.0	1.10
	18°C	(64.4°F)	7.5	1.12	9.6	1.12
	19°C	(66.2°F)	7.4	1.14	10.0	1.14
	19.4°C	(67°F)	7.5	1.15	10.1	1.15
	20°C	(68°F)	8.0	1.16	10.3	1.16
	22°C	(71.6°F)	8.2	1.20	11.0	1.20
46°C (115°F)	16°C	(60.8°F)	6.6	1.11	8.9	1.11
	18°C	(64.4°F)	7.1	1.14	9.5	1.14
	19°C	(66.2°F)	7.3	1.15	9.9	1.15
	19.4°C	(67°F)	7.4	1.16	10.0	1.16
	20°C	(68°F)	7.6	1.17	10.2	1.17
	22°C	(71.6°F)	8.1	1.21	10.9	1.21
50°C (122°F)	16°C	(60.8°F)	6.3	1.16	8.5	1.16
	18°C	(64.4°F)	6.8	1.19	9.1	1.19
	19°C	(66.2°F)	7.0	1.21	9.5	1.21
	19.4°C	(67°F)	7.1	1.22	9.6	1.22
	20°C	(68°F)	7.3	1.23	9.8	1.23
	22°C	(71.6°F)	7.8	1.28	10.5	1.28
52°C (125.5°F)	16°C	(60.8°F)	6.2	1.19	8.3	1.19
	18°C	(64.4°F)	6.6	1.22	8.9	1.22
	19°C	(66.2°F)	6.9	1.24	9.2	1.24
	19.4°C	(67°F)	7.0	1.25	9.4	1.25
	20°C	(68°F)	7.1	1.26	9.6	1.26
	22°C	(71.6°F)	7.6	1.31	10.3	1.31
Evaporator airflow (m^3/min)			26		34	
Bypass factors			0.35		0.23	
S.H.F. at rating conditions			0.67		0.74	

Notes :
1. T.C : Total capacity (× 10^3 W) ··· (Btu / h) ≒ (W) × 3.4, (kcal / h) = (W) × 0.86
   C.F (T.I) : Correction factors of Total input (Indoor unit input + Outdoor unit input)
2. (°F) = 32 + 9 / 5 (°C)
3. Guaranteed operating range (cooling) { Lower limit ... Indoor : D.B. 21°C (70°F), W.B. 15.5°C (60°F), Outdoor : D.B. 21°C (70°F)
   Upper limit ··· Indoor : D.B. 35°C (95°F), W.B. 22.5°C (72.5°F), Outdoor : D.B. 52°C (125.5°F)

Cooling capacity 60Hz

Service Ref.			PE-5EAK.TH(-U)		PE-6EAK.TH(-U)	
Temperature			T.C.	C.F. (T.I.)	T.C.	C.F. (T.I.)
Outdoor D.B.	Indoor D.B.					
21°C (69.8°F)	16°C	(60.8°F)	13.6	0.81	15.3	0.81
	18°C	(64.4°F)	14.4	0.82	16.2	0.82
	19°C	(66.2°F)	14.9	0.83	16.8	0.83
	19.4°C	(67°F)	15.1	0.83	17.0	0.83
	20°C	(68°F)	15.3	0.84	17.3	0.84
	22°C	(71.6°F)	16.2	0.86	18.3	0.86
25°C (77°F)	16°C	(60.8°F)	13.2	0.84	14.9	0.84
	18°C	(64.4°F)	14.1	0.85	15.9	0.85
	19°C	(66.2°F)	14.6	0.86	16.4	0.86
	19.4°C	(67°F)	14.8	0.86	16.6	0.86
	20°C	(68°F)	15.0	0.87	16.9	0.87
	22°C	(71.6°F)	16.0	0.89	18.0	0.89
30°C (86°F)	16°C	(60.8°F)	12.8	0.90	14.4	0.90
	18°C	(64.4°F)	13.6	0.92	15.3	0.92
	19°C	(66.2°F)	14.0	0.93	15.8	0.93
	19.4°C	(67°F)	14.2	0.93	16.0	0.93
	20°C	(68°F)	14.5	0.94	16.3	0.94
	22°C	(71.6°F)	15.4	0.96	17.4	0.96
32.2°C (90°F)	16°C	(60.8°F)	12.5	0.93	14.1	0.93
	18°C	(64.4°F)	13.4	0.95	15.1	0.95
	19°C	(66.2°F)	13.8	0.96	15.5	0.96
	19.4°C	(67°F)	14.0	0.97	15.7	0.97
	20°C	(68°F)	14.3	0.97	16.0	0.97
	22°C	(71.6°F)	15.2	0.99	17.1	0.99
35°C (95°F)	16°C	(60.8°F)	12.2	0.96	13.8	0.96
	18°C	(64.4°F)	13.1	0.99	14.7	0.99
	19°C	(66.2°F)	13.5	1.00	15.2	1.00
	19.4°C	(67°F)	13.7	1.00	15.4	1.00
	20°C	(68°F)	13.9	1.01	15.7	1.01
	22°C	(71.6°F)	14.9	1.04	16.7	1.04
40°C (104°F)	16°C	(60.8°F)	11.7	1.03	13.2	1.03
	18°C	(64.4°F)	12.5	1.06	14.1	1.06
	19°C	(66.2°F)	12.9	1.07	14.6	1.07
	19.4°C	(67°F)	13.1	1.08	14.7	1.08
	20°C	(68°F)	13.4	1.08	15.0	1.08
	22°C	(71.6°F)	14.3	1.11	16.0	1.11
40.6°C (105°F)	16°C	(60.8°F)	11.6	1.04	13.1	1.04
	18°C	(64.4°F)	12.4	1.06	14.0	1.06
	19°C	(66.2°F)	12.9	1.08	14.5	1.08
	19.4°C	(67°F)	13.0	1.08	14.7	1.08
	20°C	(68°F)	13.3	1.09	15.0	1.09
	22°C	(71.6°F)	14.2	1.12	16.0	1.12
45°C (113°F)	16°C	(60.8°F)	11.1	1.10	12.5	1.10
	18°C	(64.4°F)	11.9	1.12	13.4	1.12
	19°C	(66.2°F)	12.3	1.14	13.9	1.14
	19.4°C	(67°F)	12.5	1.15	14.1	1.15
	20°C	(68°F)	12.7	1.16	14.4	1.16
	22°C	(71.6°F)	13.6	1.20	15.3	1.20
46°C (115°F)	16°C	(60.8°F)	11.0	1.11	12.4	1.11
	18°C	(64.4°F)	11.8	1.14	13.3	1.14
	19°C	(66.2°F)	12.1	1.15	13.7	1.15
	19.4°C	(67°F)	12.3	1.16	13.8	1.16
	20°C	(68°F)	12.5	1.17	14.1	1.17
	22°C	(71.6°F)	13.5	1.21	15.2	1.21
50°C (122°F)	16°C	(60.8°F)	9.9	1.16	11.2	1.16
	18°C	(64.4°F)	10.7	1.19	12.0	1.19
	19°C	(66.2°F)	11.1	1.21	12.4	1.21
	19.4°C	(67°F)	11.2	1.22	12.6	1.22
	20°C	(68°F)	11.4	1.23	12.9	1.23
	22°C	(71.6°F)	11.8	1.28	13.3	1.28
52°C (125.5°F)	16°C	(60.8°F)	8.8	1.19	9.9	1.19
	18°C	(64.4°F)	9.4	1.22	10.6	1.22
	19°C	(66.2°F)	9.8	1.24	11.0	1.24
	19.4°C	(67°F)	9.9	1.25	11.2	1.25
	20°C	(68°F)	10.1	1.26	11.4	1.26
	22°C	(71.6°F)	10.5	1.31	11.8	1.31
Evaporator airflow (m^3/min)			42		42	
Bypass factors			0.19		0.19	
S.H.F. at rating conditions			0.77		0.73	

Notes : 1. T.C : Total capacity (× 10^3 W) ··· (Btu / h) ≒ (W) × 3.4, (kcal / h) = (W) × 0.86
C.F (T.I) : Correction factors of Total input (Indoor unit input + Outdoor unit input)
2. (°F) = 32 + 9 / 5 (°C)
3. Guaranteed operating range (cooling) { Lower limit ... Indoor : D.B. 21°C (70°F), W.B. 15.5°C (60°F), Outdoor : D.B. 21°C (70°F)
Upper limit ··· Indoor : D.B. 35°C (95°F), W.B. 22.5°C (72.5°F), Outdoor : D.B. 52°C (125.5°F)

Cooling capacity correction factors **50Hz**

Service Ref.	Refrigerant piping length (one way)									
	5m (16ft)	10m (33ft)	15m (49ft)	20m (66ft)	25m (82ft)	30m (98ft)	35m (115ft)	40m (131ft)	45m (148ft)	50m (164ft)
PE-3EAK.TH **PE-3EAK.TH-U**	1.0	0.978	0.962	0.948	0.934	0.921	—	—	—	—
PE-4EAK.TH **PE-4EAK.TH-U**	1.0	0.984	0.974	0.964	0.954	0.944	0.935	0.926	—	—
PE-5EAK.TH **PE-5EAK.TH-U**	1.0	0.978	0.962	0.948	0.934	0.921	0.908	0.896	0.884	0.875
PE-6EAK.TH **PE-6EAK.TH-U**	1.0	0.971	0.950	0.931	0.912	0.896	0.880	0.864	0.850	0.840

Cooling capacity correction factors **60Hz**

Service Ref.	Refrigerant piping length (one way)									
	5m (16ft)	10m (33ft)	15m (49ft)	20m (66ft)	25m (82ft)	30m (98ft)	35m (115ft)	40m (131ft)	45m (148ft)	50m (164ft)
PE-3EAK.TH **PE-3EAK.TH-U**	1.0	0.971	0.950	0.931	0.913	0.896	—	—	—	—
PE-4EAK.TH **PE-4EAK.TH-U**	1.0	0.980	0.966	0.952	0.939	0.926	0.914	0.902	—	—
PE-5EAK.TH **PE-5EAK.TH-U**	1.0	0.971	0.950	0.931	0.913	0.896	0.880	0.864	0.850	0.840
PE-6EAK.TH **PE-6EAK.TH-U**	1.0	0.960	0.933	0.908	0.885	0.894	0.845	0.828	0.812	0.800

3-2. STANDARD OPERATION DATA

Service Ref.				PE-3EAK.TH(-U)		PE-4EAK.TH(-U)	
Mode				Cooling	Cooling	Cooling	Cooling
Total	Capacity		W	7,500	8,100	9,800	10,900
	Input		kW	3.41	3.76	3.59	4.69
Electrical Circuit	**Indoor unit Service Ref.**			**PE-3EAK.TH(-U)**		**PE-4EAK.TH(-U)**	
	Phase, Hz			1, 50	1, 60	1, 50	1, 60
	Volts		V	220	220	220	220
	Amperes		A	1.07	1.41	1.41	1.95
	Outdoor unit Service Ref.			**PU-3VJC$_1$.TH/3YJC.TH**	**PU-3NJA.TH**	**PU-4YJSA$_1$.TH**	**PU-4TJSA.TH**
	Phase, Hz			1, 50/3,50	1, 60	3, 50	3, 60
	Volts		V	220/380	220	380	220
	Amperes		A	15.1/ 5.7	17.6	5.7	12.2
Refrigerant Circuit	Discharge pressure		MPa (kgf/㎠)	2.04	2.20	1.91 (19.5)	2.14 (21.8)
	Suction pressure		MPa (kgf/㎠)	0.46	0.44	0.54 (5.5)	0.51 (5.2)
	Discharge temperature		℃	88.1	73.2	77.4	77.5
	Condensing temperature		℃	52.4	54.2	50.3	54.9
	Suction temperature		℃	4.5	1.3	9.2	6.7
	Ref. pipe length		m	5	5	5	5
Indoor side	Intake air temperature	D.B.	℃	27	27	27	27
		W.B.	℃	19	19	19	19
	Discharge air temperature	D.B.	℃	15.0	14.2	14.6	15.3
Outdoor side	Intake air temperature	D.B.	℃	35	35	35	35
		W.B.	℃	24	24	24	24

The unit of pressure has been changed to Mpa based on SI (International System of Units) in accordance with I.S.O. (International Organization for Standardization).

The conversion factor is : 1(Mpa) =10.2 (kgf/㎠)

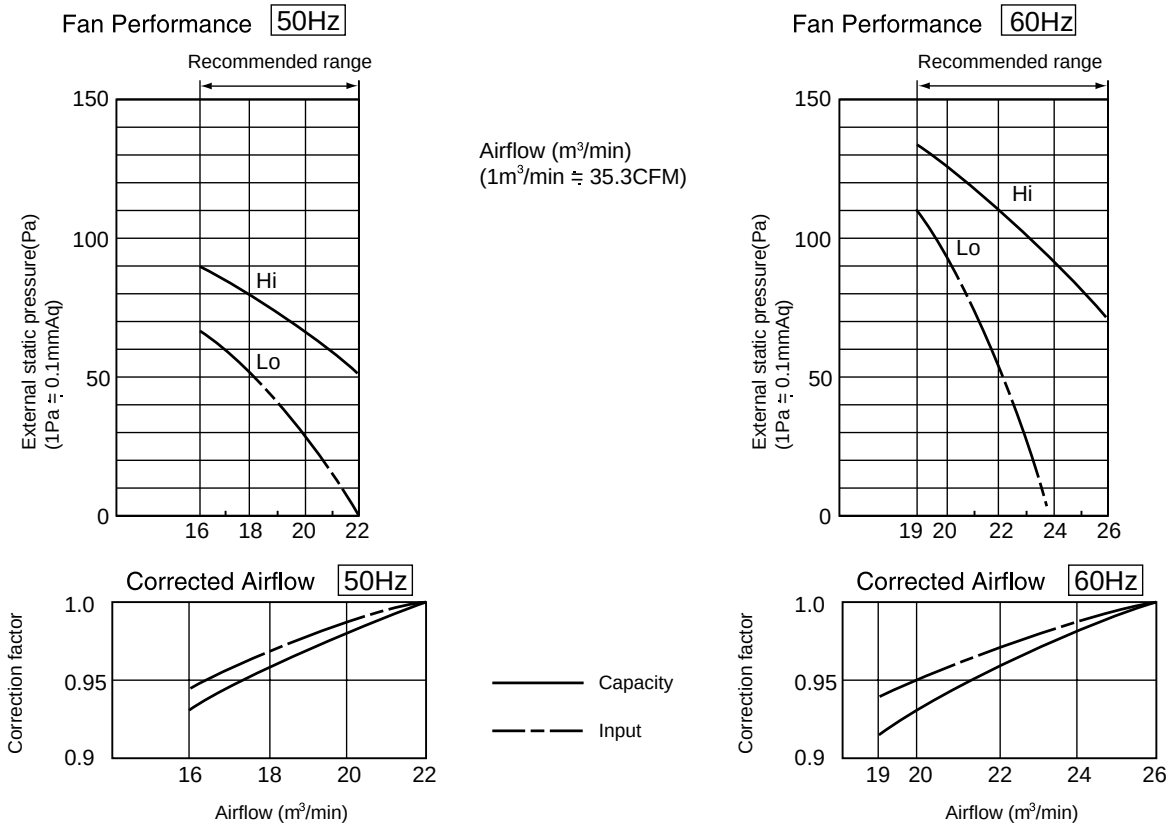
Service Ref.				PE-5EAK.TH(-U)		PE-6EAK.TH(-U)	
Mode				Cooling	Cooling	Cooling	Cooling
Total	Capacity		W	12,100	13,500	14,000	15,200
	Input		kW	5.10	6.06	5.65	6.58
Electrical Circuit	**Indoor unit Service Ref.**			**PE-5EAK.TH(-U)**		**PE-6EAK.TH(-U)**	
	Phase, Hz			1, 50	1, 60	1, 50	1, 60
	Volts		V	220	220	220	220
	Amperes		A	2.50	1.99	2.50	1.99
	Outdoor unit Service Ref.			**PU-5YJSA$_1$.TH**	**PU-5TJSA.TH**	**PU-6YJSA$_1$.TH**	**PU-6TJSA.TH**
	Phase, Hz			3, 50	3, 60	3, 50	3, 60
	Volts		V	380	220	380	220
	Amperes		A	8.15	16.83	8.63	18.70
Refrigerant Circuit	Discharge pressure		MPa (kgf/㎠)	1.86 (19.0)	1.98 (20.2)	1.95 (19.9)	2.01 (20.5)
	Suction pressure		MPa (kgf/㎠)	0.48 (4.9)	0.43 (4.4)	0.44 (4.5)	0.40 (4.1)
	Discharge temperature		℃	72.2	78.3	77.8	81
	Condensing temperature		℃	49.3	51.9	50.8	52.1
	Suction temperature		℃	- 0.9	1.6	1.7	- 0.5
	Ref. pipe length		m	5	5	5	5
Indoor side	Intake air temperature	D.B.	℃	27	27	27	27
		W.B.	℃	19	19	19	19
	Discharge air temperature	D.B.	℃	15.5	14.9	14.5	14.1
Outdoor side	Intake air temperature	D.B.	℃	35	35	35	35
		W.B.	℃	24	24	24	24

The unit of pressure has been changed to Mpa based on SI (International System of Units) in accordance with I.S.O. (International Organization for Standardization).

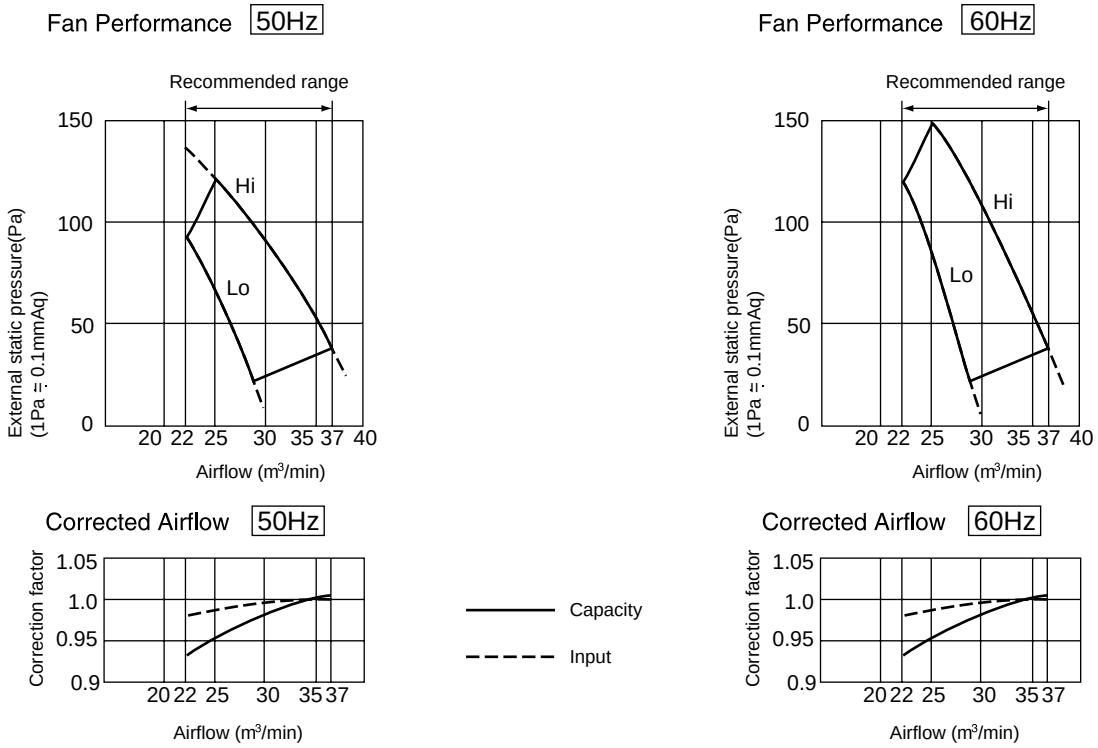
The conversion factor is : 1(Mpa) =10.2 (kgf/㎠)

3-3. FAN PERFORMANCE AND CORRECTED AIRFLOW

Service Ref. : PE-3EAK.TH PE-3EAK.TH-U

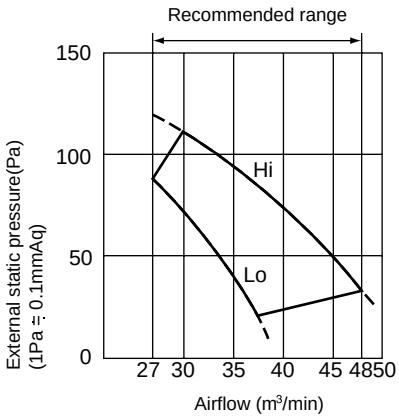


Service Ref. : PE-4EAK.TH PE-4EAK.TH-U

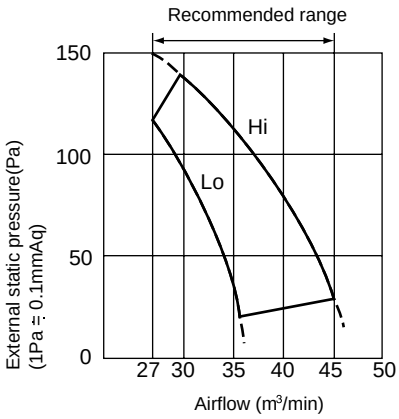


Service Ref. : PE-5EAK.TH PE-5EAK.TH-U

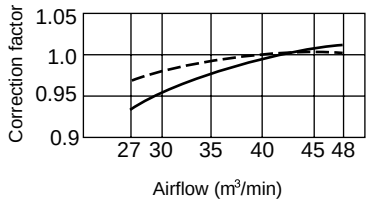
Fan Performance 50Hz

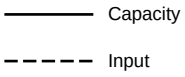


Fan Performance 60Hz

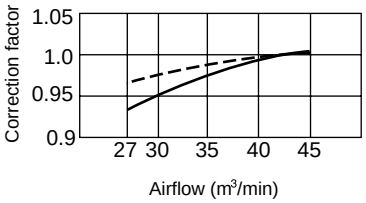


Corrected Airflow 50Hz



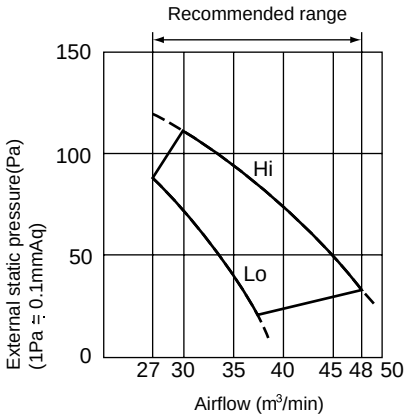


Corrected Airflow 60Hz

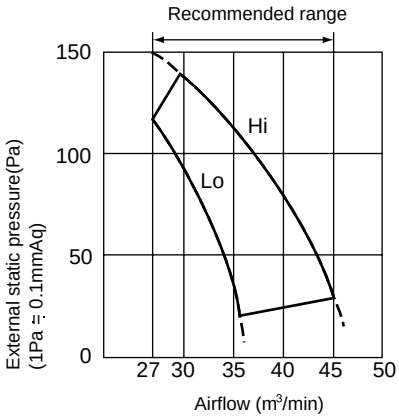


Service Ref. : PE-6EAK.TH PE-6EAK.TH-U

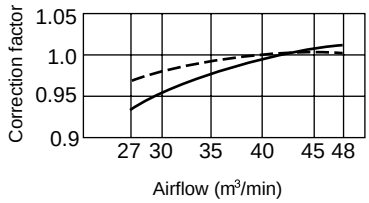
Fan Performance 50Hz

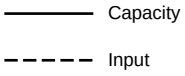


Fan Performance 60Hz

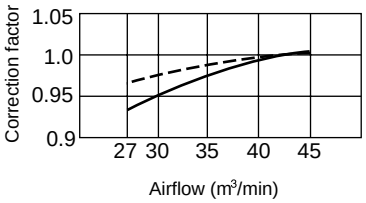


Corrected Airflow 50Hz





Corrected Airflow 60Hz

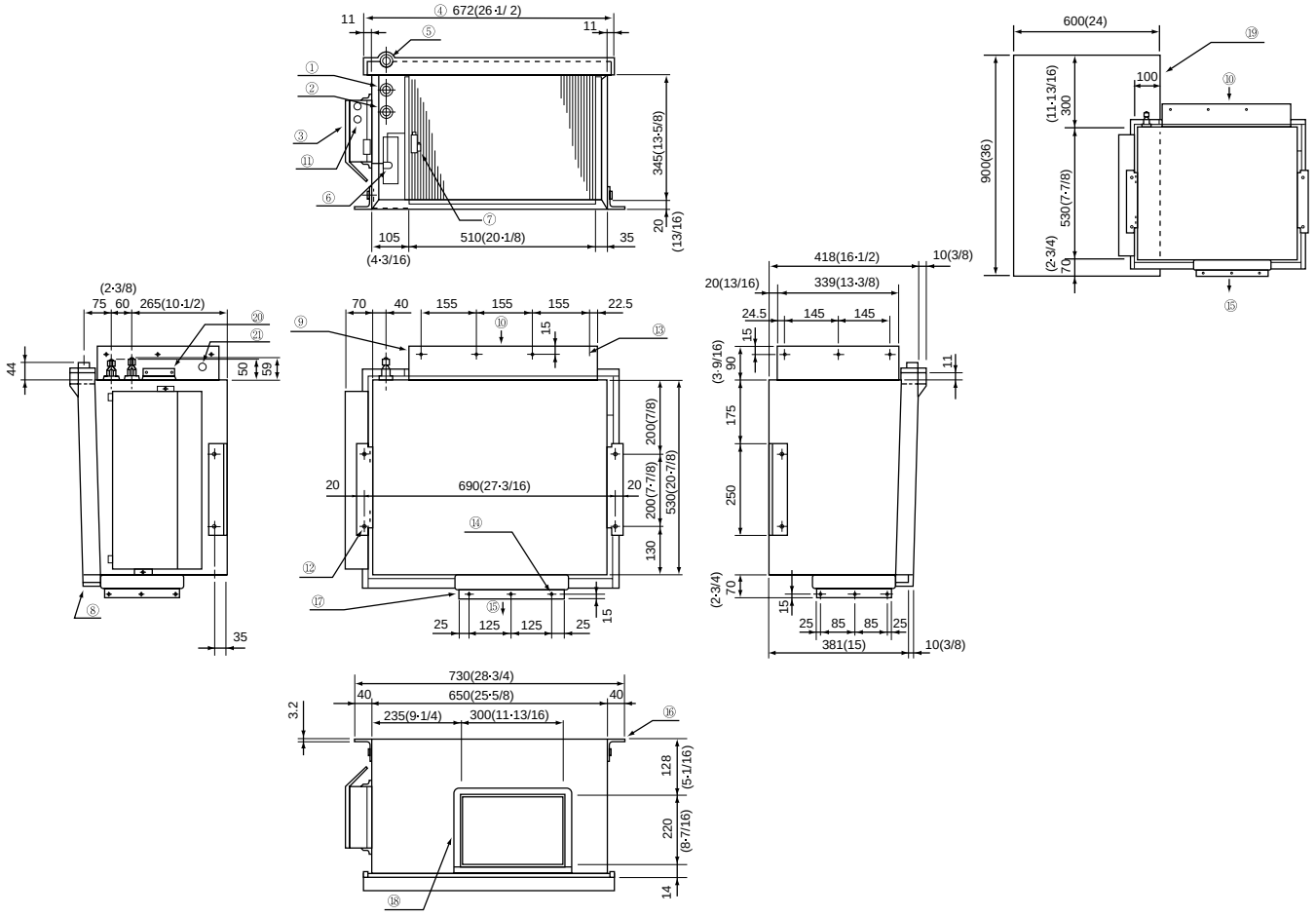


4 OUTLINES AND DIMENSIONS

4-1. INDOOR UNIT

Unit : mm (inch)

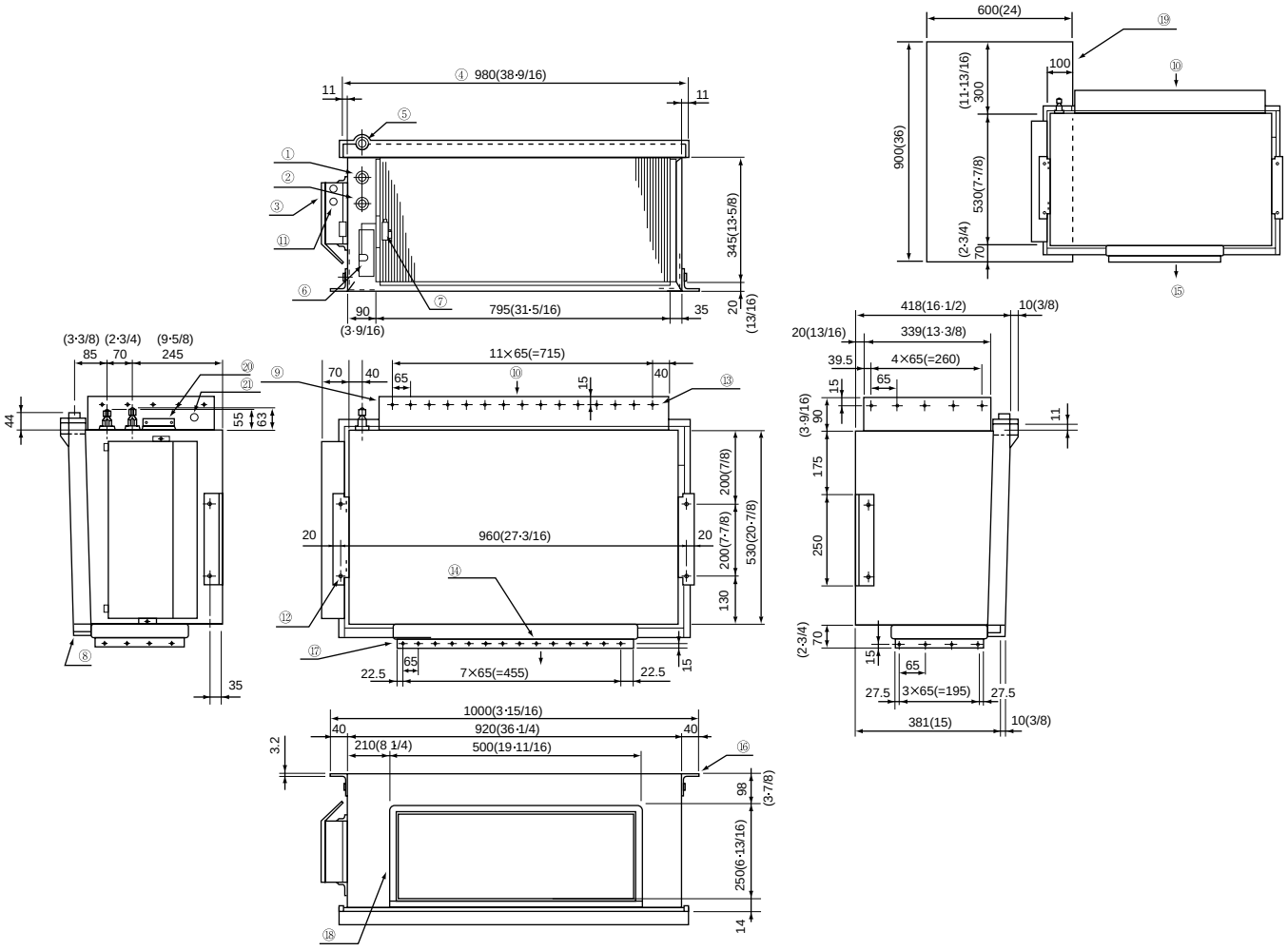
PE-3EAK.TH PE-3EAK.TH-U



①	Refrigerant-pipe flared connection ϕ9.52 (3/8)	⑫	Suspension bolt holes (4-ϕ12 (1/2))
②	Refrigerant-pipe flared connection ϕ15.88 (5/8)	⑬	14-ϕ3 (1/8) holes
③	Electrical parts box	⑭	For air outlet duct connection (12-ϕ3 (1/8) holes)
④	Drainage pan	⑮	Air outlet
⑤	Drainage pipe connection R1 (male)	⑯	Mounting plate
⑥	Service panel (Indoor coil thermistor)	⑰	Air outlet duct flange
⑦	Room temperature thermistor	⑱	Heat insulator t10 (3/8)
⑧	Heat insulator t10 (3/8)	⑲	Service space (opening) in the ceiling
⑨	Air intake duct flange	⑳	Service panel (Room temperature thermistor)
⑩	Air intake	㉑	Duct earth
⑪	Wiring entry (2-ϕ22 (7/8) holes)		

PE-4EAK.TH PE-4EAK.TH-U

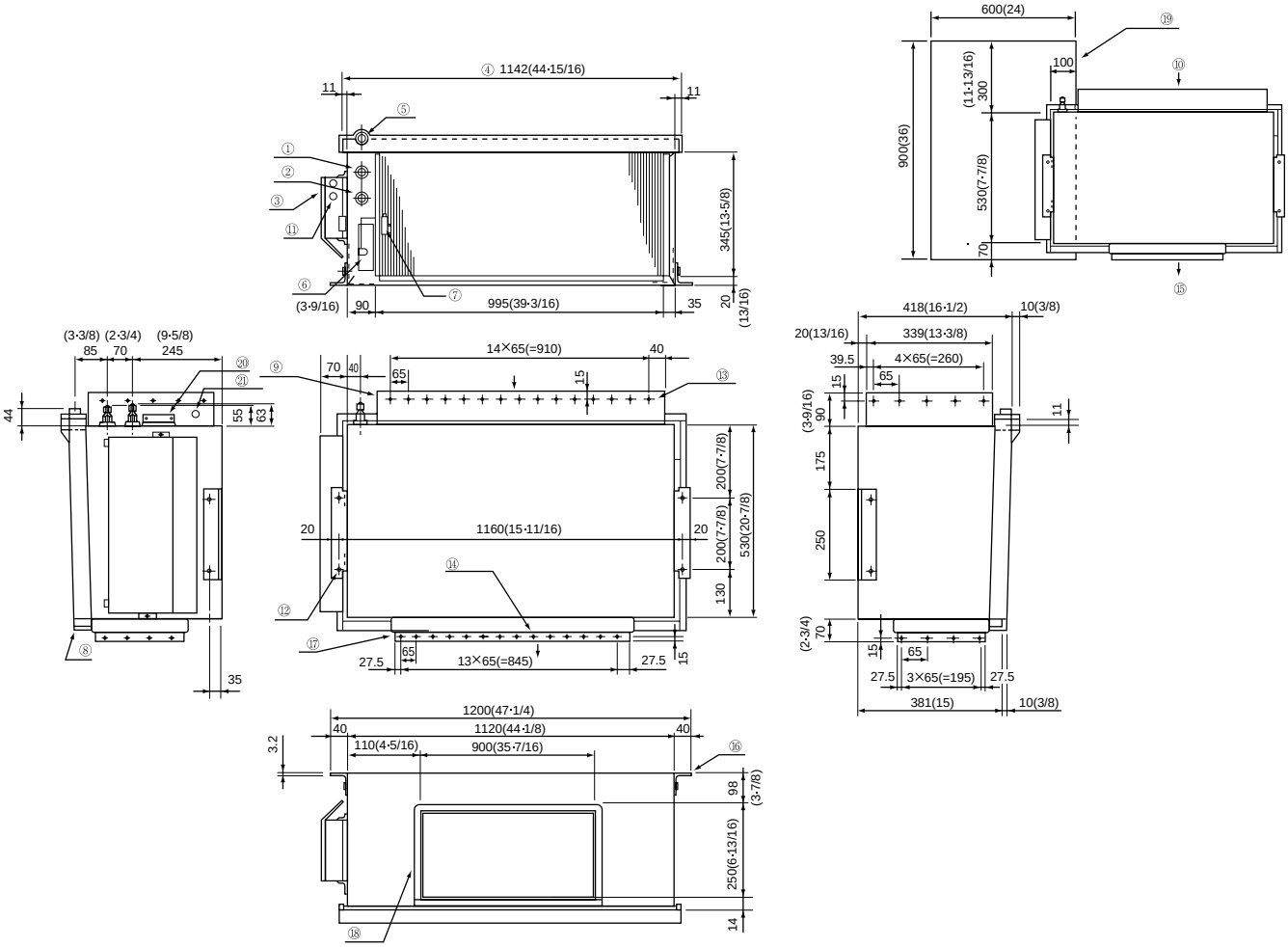
Unit : mm (inch)



①	Refrigerant-pipe flared connection ϕ9.52 (3/8)	⑫	Suspension bolt holes (4-ϕ12 (1/2))
②	Refrigerant-pipe flared connection ϕ19.05 (3/4)	⑬	34-ϕ3 (1/8) holes
③	Electrical parts box	⑭	For air outlet duct connection (24-ϕ3 (1/8) holes)
④	Drain pan	⑮	Air outlet
⑤	Drain pipe connection R1 (male)	⑯	Mounting plate
⑥	Service panel (Indoor coil thermistor)	⑰	Air outlet duct flange
⑦	Room temperature thermistor	⑱	Heat insulator t10 (3/8)
⑧	Heat insulator t10 (3/8)	⑲	Service space (opening) in the ceiling
⑨	Air intake duct flange	⑳	Service panel (Room temperature thermistor)
⑩	Air intake	㉑	Duct earth
⑪	Wiring entry (2-ϕ22 (7/8) holes)		

PE-5EAK.TH PE-5EAK.TH-U
PE-6EAK.TH PE-6EAK.TH-U

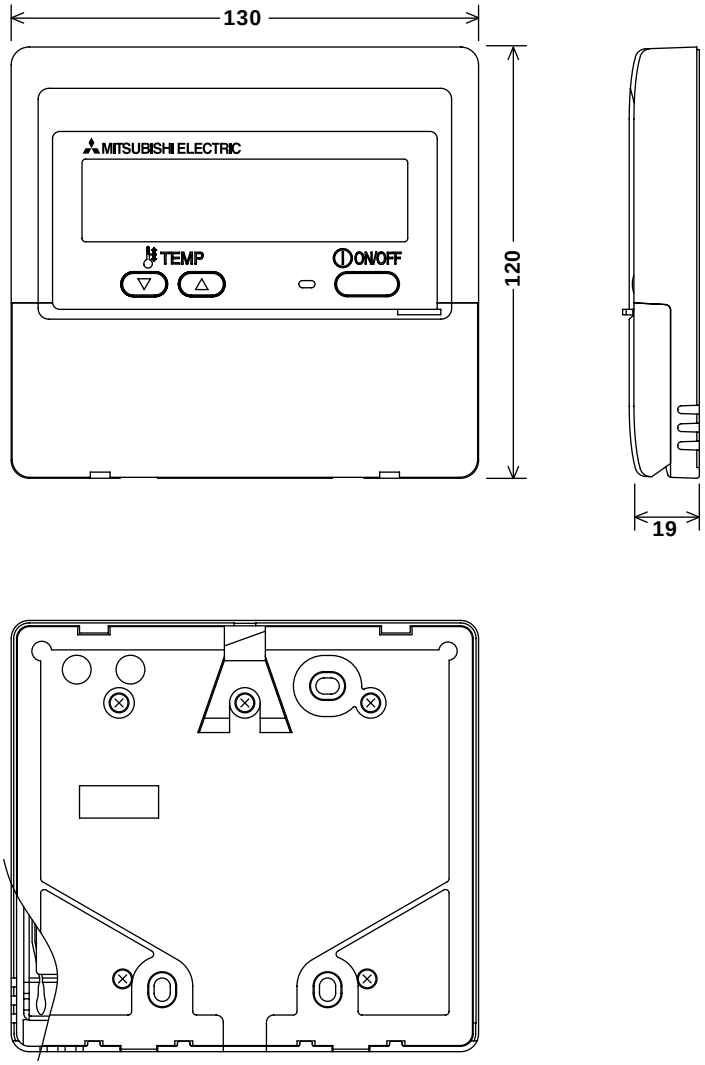
Unit : mm (inch)



①	Refrigerant-pipe flared connection ϕ9.52 (3/8)	⑫	Suspension bolt holes (4-ϕ12 (1/2))
②	Refrigerant-pipe flared connection ϕ19.05 (3/4)	⑬	40-ϕ3 (1/8) holes
③	Electrical parts box	⑭	For air outlet duct connection (36-ϕ3 (1/8) holes)
④	Drain pan	⑮	Air outlet
⑤	Drain pipe connection R1 (male)	⑯	Mounting plate
⑥	Service panel (Indoor coil thermistor)	⑰	Air outlet duct flange
⑦	Room temperature thermistor	⑱	Heat insulator t10 (3/8)
⑧	Heat insulator t10 (3/8)	⑲	Service space (opening) in the ceiling
⑨	Air intake duct flange	⑳	Service panel (Room temperature thermistor)
⑩	Air intake	㉑	Duct earth
⑪	Wiring entry (2-ϕ22 (7/8) holes)		

4-2. REMOTE CONTROLLER

Unit : mm



5 WIRING DIAGRAM

PE-3EAK.TH PE-4EAK.TH PE-5EAK.TH PE-6EAK.TH
PE-3EAK.TH-U PE-4EAK.TH-U PE-5EAK.TH-U PE-6EAK.TH-U

SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME
P.B	INDOOR POWER BOARD	I.B	SW1	SWITCH(MODEL SELECTION)※See table 1	MF	FAN MOTOR
I.B	INDOOR CONTROLLER BOARD		SW5	SWITCH(SYSTEM SELECTION)※See table 2	TB2	TERMINAL BLOCK(POWER SUPPLY)
FUSE	FUSE(T6.3AL250V)		SW6	SWITCH(EMERGENCY OPERATION)	TB4	TERMINAL BLOCK (INDOOR/OUTDOOR CONNECTING LINE)
ZNR	VARISTOR		SWE	CONNECTOR(EMERGENCY OPERATION)		
CN2L	CONNECTOR(LOSSNAY)		X4	RELAY(FAN MOTOR)	TB5	TERMINAL BLOCK(REMOTE CONTROLER TRANSMISSION LINE)
CN32	CONNECTOR(REMOTE SWITCH))		X5	RELAY(FAN MOTOR)		
CN41	CONNECTOR(HA TERMINAL-A)		X6	RELAY(FAN MOTOR)	TH1	ROOM TEMPERATURE THERMISTOR (0℃/15kΩ, 25℃/5.4kΩ DETECT)
CN51	CONNECTOR(CENTRALLY CONTROL)	R.B		REMOTE CONTROLLER BOARD		
LED1	POWER SUPPLY(I.B)		TB6	TERMINAL BLOCK(REMOTE CONTROLLER TRANSMISSON LINE)	TH2	PIPE TEMPERATURE THERMISTOR/LIQUID (0℃/15kΩ, 25℃/5.4kΩ DETECT)
LED2	POWER SUPPLY(R.B)					
		C		CAPACITOR(FAN MOTOR)		

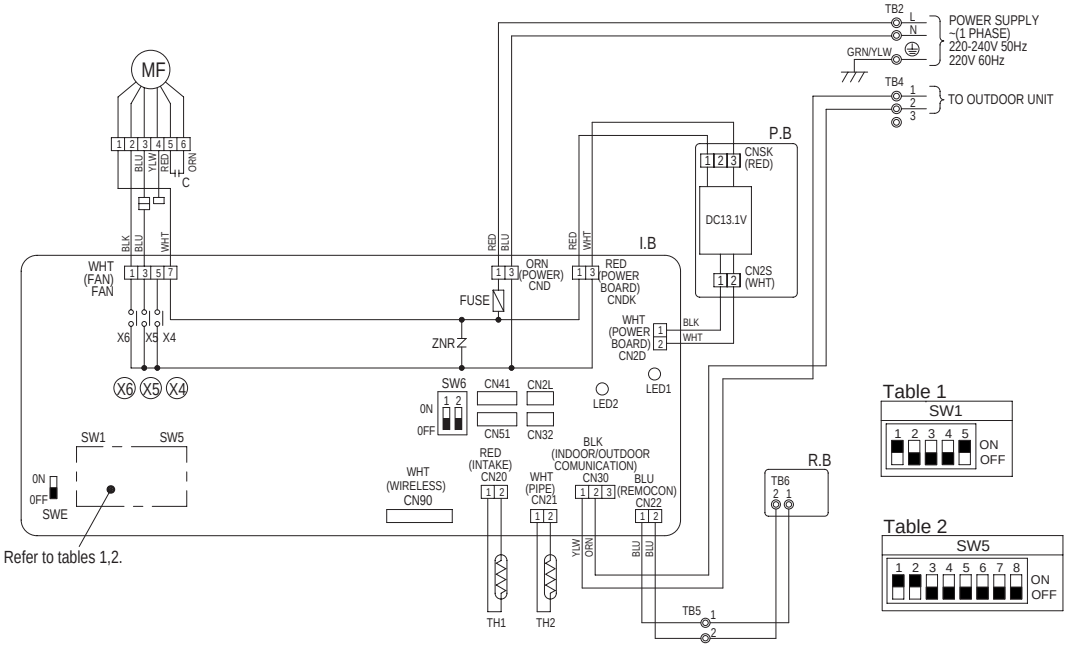


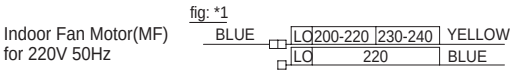
Table 1

Table 2

Check code	Symptom
P1	Abnormality of room temperature thermistor(TH1).
P2	Abnormality of pipe temperature thermistor/Liquid(TH2).
P4	Abnormality of drain sensor(DS).
P5	Malfunction of drain-up machine.
P6	Freezing /overheating protection is working.
P8	Abnormality in outdoor unit. Refer to outdoor unit wiring diagram.
E0-E5	Abnormality of the signal transmission between remote controller and indoor unit.
Fb	Abnormality of indoor controller board.
----	No trouble generated in the past.
FFFF	No corresponding unit.

[Servicing]
Fasten terminal of the terminal board "TB4" equips lock system.
To remove the fastened terminal,pull it while pressing the protruding portion(locking lever)of the terminal.The fastened terminal protruding portion should face upward.

[NOTES]
1.Since the indoor fan motor(MF) is connected with 220V 60Hz power, if 220V 50Hz power is used, change the wiring connection showing fig: *1



2.Symbols used in wiring diagram above are, □□□:Connector, ◎ :Terminal(block).

3.Indoor and outdoor connecting wires are made with polarities, make wiring matching terminal numbers(1,2,3).

4.Since the outdoor side electric wiring may change be sure to check the outdoor unit electric wiring for servicing.

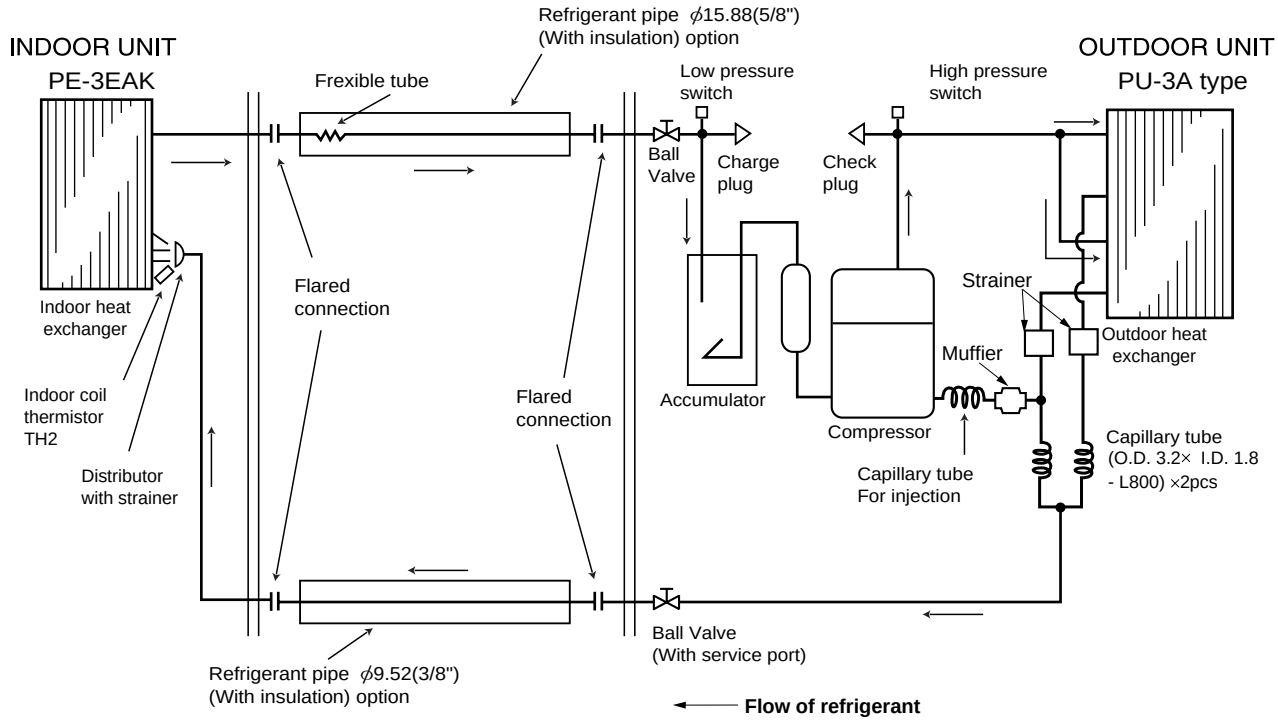
[Self diagnosis]
1.For details on how to operate self-diagnosis with the wireless remote control,refer to the technical manuals etc.
2.For the wired remote control:When you quickly press twice the CHECK switch on the remote control,the unit begins self-diagnosis, and Check Codes generated in the past appear on the display. For Check Codes and Symptoms refer to the table below.

[Emergency operation procedure]
1.When the wired remote control or the indoor unit microcomputer has failed, but all other components work if you set the switch(SWE,SW6) on the indoor control board,the indoor unit will begin properly Emergency Operation.
2.When you activate emergency operation of the cooling, you have to set the connector(SWE) and switch(SW6)on the indoor controller.
SWE:ON • Indoor fan is running high speed.
SW6-1:ON • Emergency operation of cooling mode.
3.Before you activate emergency operation,check the following points:
(1)Emergency operation cannot be activated when:
• the outdoor unit malfunctions.
• the indoor fan malfunctions.
(2)Emergency operation becomes continuous only by switching the power source on/off. ON/OFF on the remote control or temperature control etc. does not function.
(3)Emergency cooling should be limited to 10 hours maximum (The indoor unit heat exchanger may freeze).
(4)After emergency operation has been deactivated,set the switches etc. to their original positions.

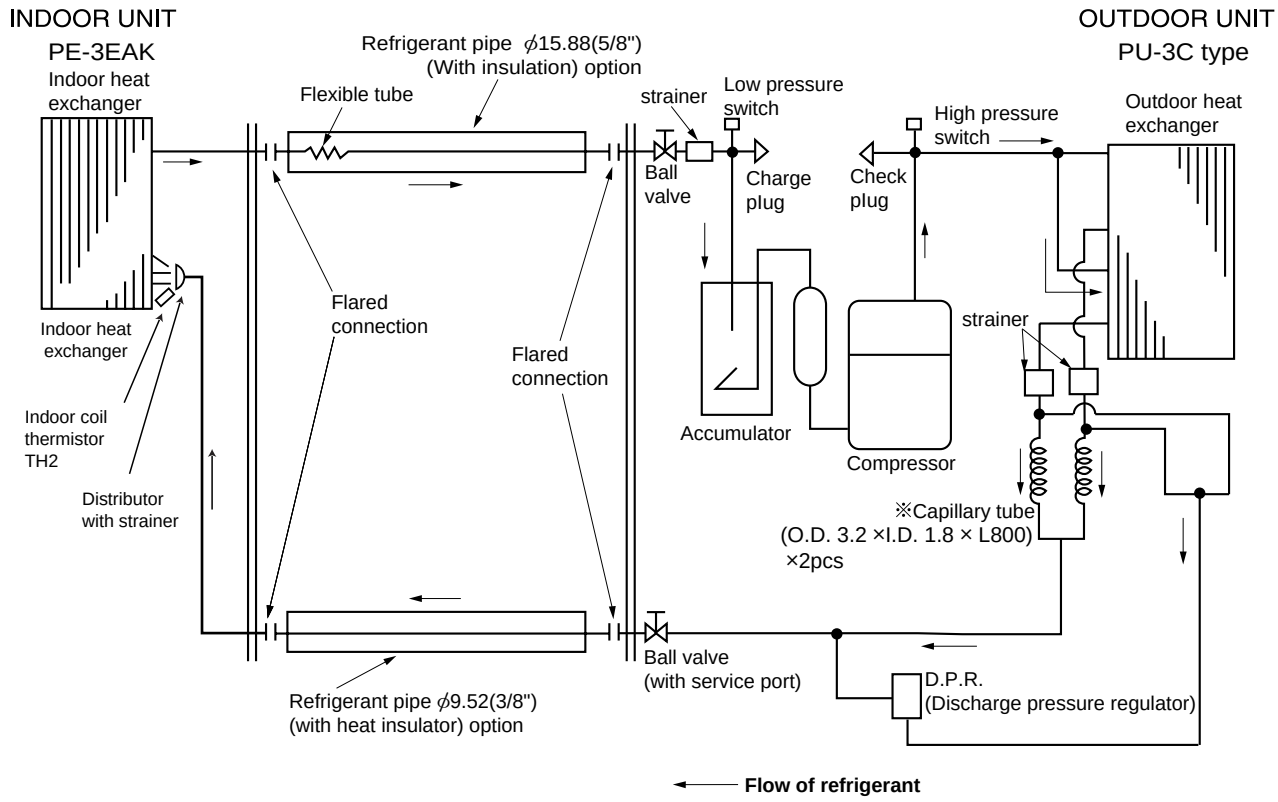
6 REFRIGERANT SYSTEM DIAGRAM

Unit : mm

PE-3EAK.TH PE-3EAK.TH-U / PU-3NJA.TH

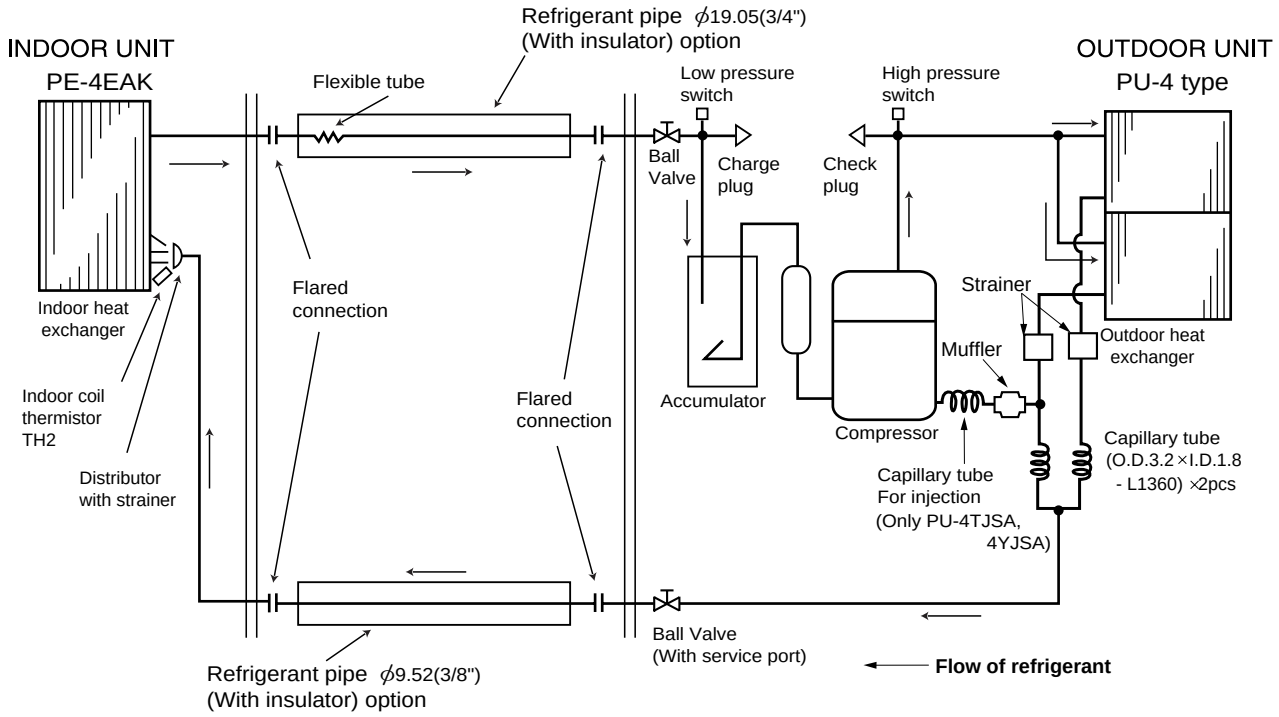


PE-3EAK.TH PE-3EAK.TH-U/ PU-3VJC1.TH, PU-3YJC.TH

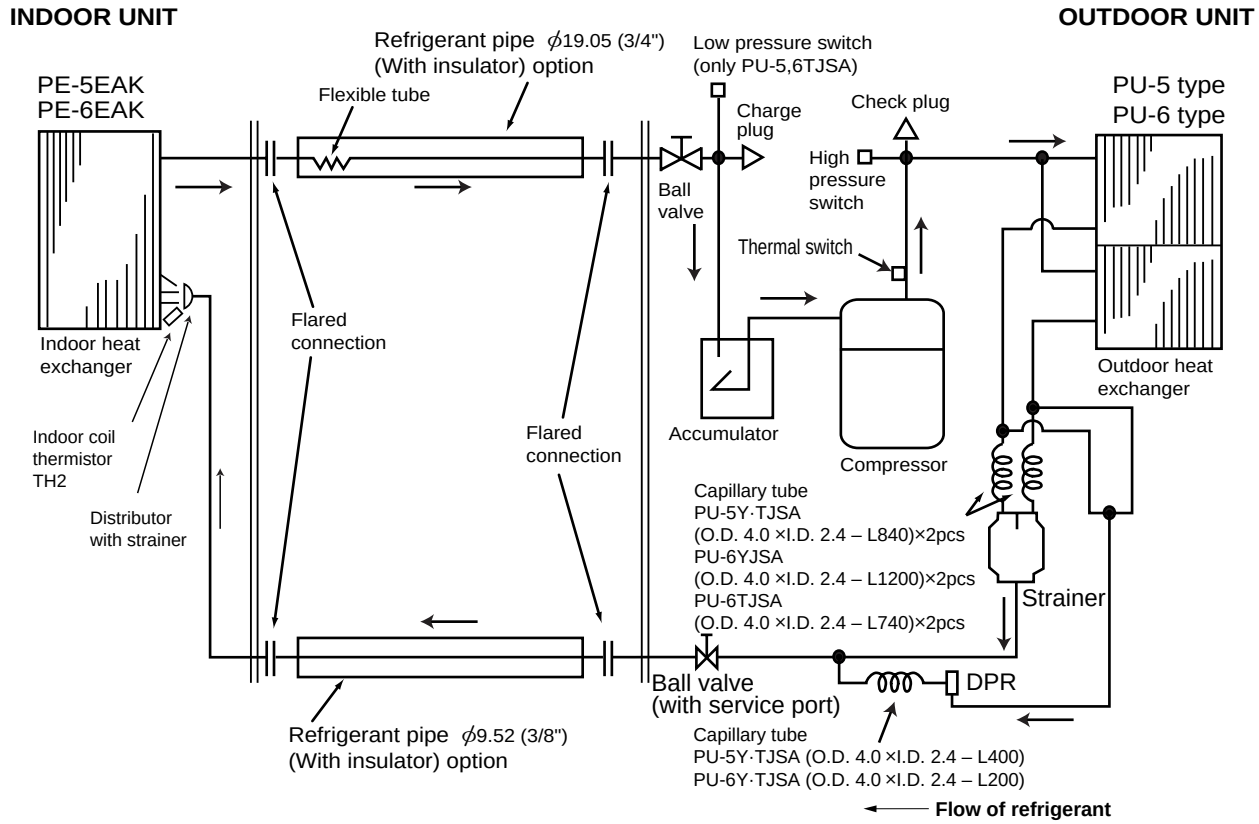


PE-4EAK.TH PE-4EAK.TH-U / PU-4VLJSA2.TH, PU-4YJSA1.TH, PU-4TJSA.TH

Unit : mm



PE-5EAK.TH PE-5EAK.TH-U / PU-5YJSA1.TH, PU-5TJSA.TH
PE-6EAK.TH PE-6EAK.TH-U / PU-6YJSA1.TH, PU-6TJSA.TH



7 TROUBLESHOOTING

7-1. TROUBLESHOOTING

<Error code display by self-diagnosis and actions to be taken for service (summary)>

Present and past error codes are logged and displayed on the wired remote controller or controller board of outdoor unit. Actions to be taken for service,which depends on whether or not the the inferior phenomenon is reoccurring at service, are summarized in the table below. Check the contents below before investigating details.

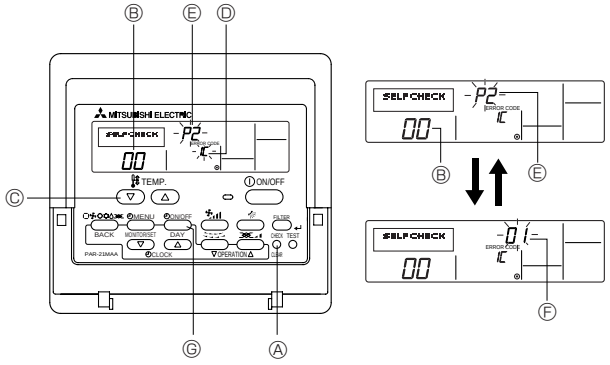
Unit conditions at service	Error code	Actions to be taken for service (summary)
The inferior phenomenon is reoccurring.	Displayed	Judge what is wrong and take a corrective action according to “SELF-DIAGNOSIS ACTION TABLE” (7-3).
	Not displayed	Identify the cause of the inferior phenomenon and take a corrective action according to “TROUBLESHOOTING BY INFERIOR PHENOMENA ” (7-4).
The inferior phenomenon is not reoccurring.	Logged	①Consider the temporary defects such as the work of protection devices in the refrigerant circuit including compressor, poor connection of wiring, noise and etc. Re-check the symptom, and check the installation environment, refrigerant amount, weather when the inferior phenomenon occurred, and wiring related. ②Reset error code logs and restart the unit after finishing service. ③There is no abnormality in electrical components, controller boards, and remote controller.
	Not logged	①Recheck the abnormal symptom. ②Identify the cause of the inferior phenomenon and take a corrective action according to “TROUBLESHOOTING BY INFERIOR PHENOMENA ” (7-4). ③Continue to operate unit for the time being if the cause is not ascertained. ④There is no abnormality in electrical components, controller boards, remote controller etc.

7-2. MALFUNCTION-DIAGNOSIS METHOD BY REMOTE CONTROLLER

<In case of trouble during operation>

When a malfunction occurs to air conditioner, both indoor unit and outdoor unit will stop and operation lamp blinks to inform unusual stop.

■ Wired remote controller



① Turn on the power.
② Press the [CHECK] button twice.
③ Set address with [TEMP] button if system control is used.
④ Press the [ON/OFF] button to stop the self-check.

Ⓐ CHECK button
Ⓑ Address
Ⓒ TEMP. button
Ⓓ IC : Indoor unit
OC: Outdoor unit
Ⓔ Check code (– – – – : No trouble generated in the past. / F F F F : No corresponding unit.)
Ⓕ Unit No.
Ⓖ Timer ON/OFF button

<To delete check code>

① Display the error code at the self-check result display screen.
② The address for self-check will blink when the Ⓖ ◴ ON/OFF button is pressed twice within three seconds.

Errors detected by indoor unit

Wired remote controller ① Check code	Symptom	Remark
P1	Intake sensor error	
P2	Pipe (TH2) sensor error	
P4	Drain sensor error	
P5	Drain pump error	
PA	Forced compressor stop	
P6	Freezing/ Overheating safeguard operation	
P8	Pipe temperature error / Outdoor unit error	
E4, E5	Remote controller signal receiving error	
–	–	
–	–	
Fb	Indoor unit control system error (memory error, etc.)	
E0, E3	Remote controller transmission error	
E1, E2	Remote controller control board error	

• On wired remote controller
①Check code displayed in the LCD.

• If the unit cannot be operated properly after test run has been performed, refer to the following table to remove the cause.

Symptom		Cause
Wired remote controller		
PLEASE WAIT	For about 2 minutes following power-on	•For about 2 minutes following power-on,operation of the remote controller is not possible due to system start-up. (Correct operation)
PLEASE WAIT → Error code	After about 2 minutes has expired following power-on	•Connector for the outdoor unit's protection device is not connected. •Reverse or open phase wiring for the outdoor unit's power terminal block
Display messages do not appear even when operation switch is turned ON (operation lamp does not light up).		•Incorrect wiring between indoor and outdoor units •Remote controller wire short

Note:
Operation is not possible for about 30 seconds after cancellation of function selection. (Correct operation)

For description of each LED (LED1, 2) provided on the indoor controller, refer to the following table.

LED1 (power for microcomputer)	Indicates whether control power is supplied. Make sure that this LED is always lit.
LED2 (power for wired remote controller)	Indicates whether power is supplied to the wired remote controller. This LED lights only in the case of the main indoor unit.

7-3. SELF-DIAGNOSIS ACTION TABLE

Error Code	Meaning of error code and detection method	Cause	Countermeasure
P1	**Abnormality of room temperature thermistor (TH1)** ① The unit is in three-minute resume prevention mode if short/open of thermistor is detected. Abnormal if the unit does not reset normally after three minutes. (The unit returns to normal operation, if it has normally reset.) ② Constantly detected during cooling, drying, and heating operation. Short: 90℃ or more Open: -40℃ or less	① Defective thermistor characteristics. ② Contact failure of connector (CN20) on the indoor controller board. (Insert failure) ③ Breaking of wire or contact failure of thermistor wiring. ④ Defective indoor controller board.	①–③ Check resistance value of thermistor. 0℃ ····15.0kΩ 10℃ ·····9.6kΩ 20℃ ·····6.3kΩ 30℃ ·····4.3kΩ 40℃ ·····3.0kΩ If you put force on (draw or bend) the lead wire with measuring resistance value of thermistor breaking of wire or contact failure can be detected. ② Check contact failure of connector (CN20) on the indoor controller board. Refer to 7-7. Turn the power on again and check restart after inserting connector again. ④ Check room temperature display on remote controller. Replace indoor controller board if there is abnormal difference with actual room temperature. Turn the power off, and on again to operate after check.
P2	**Abnormality of pipe temperature thermistor/Liquid (TH2)** ① The unit is in three-minute resume prevention mode if short/open of thermistor is detected. Abnormal if the unit does not reset normally after three minutes. (The unit returns to normal operation, if it has normally reset.) ② Constantly detected during cooling, drying, and heating (except defrosting) operation. Short: 90℃ or more Open: -40℃ or less	① Defective thermistor characteristics. ② Contact failure of connector (CN21) on the indoor controller board. (Insert failure) ③ Breaking of wire or contact failure of thermistor wiring. ④ Defective refrigerant circuit is causing thermistor temperature of 90℃ or more or -40℃ or less. ⑤ Defective indoor controller board.	①–③ Check resistance value of thermistor. For characteristics, refer to (P1) above. ② Check contact failure of connector (CN21) on the indoor controller board. Refer to 7-7. Turn the power on and check restart after inserting connector again. ④ Check pipe <liquid> temperature with remote controller in test run mode. If pipe <liquid> temperature is exclusively low (in cooling mode) or high (in heating mode), refrigerant circuit may have defective. ⑤ Check pipe <liquid> temperature with remote controller in test run mode. If there is exclusive difference with actual pipe <liquid> temperature, replace indoor controller board. Turn the power off, and on again to operate after check.
P4	**Abnormality of drain sensor (DS)** ① Suspensive abnormality, if short/open of thermistor is detected for 30 seconds continuously. Turn off compressor and indoor fan. ② Short/open is detected for 30 seconds continuously during suspensive abnormality. (The unit returns to normal operation, if it has normally reset.) ③ Detect the following condition. • During cooling and drying operation. • In case that pipe <liquid> temperature - room temperature <-10deg (Except defrosting) • When pipe <liquid> temperature or room temperature is short/open temperature. • During drain pump operation.	① Defective thermistor characteristics ② Contact failure of connector (CN31) on the indoor controller board. (Insert failure). ③ Breaking of wire or contact failure of drain sensor wiring. ④ Defective indoor controller board.	①–③ Check resistance value of thermistor. 0℃ ·····6.0kΩ 10℃ ····3.9kΩ 20℃ ····2.6kΩ 30℃ ····1.8kΩ 40℃ ····1.3kΩ ② Check contact failure of connector (CN31) on the indoor controller board. Refer to 7-7. Turn the power on again and check restart after inserting connector again. ④ Replace indoor controller board if drain pump operates with the line of drain sensor connector CN31-① and ② is short-circuited, and abnormality reappears. Turn the power off, and on again to operate after check.
P5	**Malfunction of drain pump (DP)** ① Suspensive abnormality, if thermistor of drain sensor is let heat itself and temperature rises slightly. Turn off compressor and indoor fan. ② Drain pump is abnormal if the condition above is detected during suspensive abnormality. ③ Constantly detected during drain pump operation.	① Malfunction of drain pump ② Defective drain Clogged drain pump Clogged drain pipe ③ Attached drop of water at the drain sensor • Drops of drain trickles from lead wire. • Clogged filter is causing wave of drain. ④ Defective indoor controller board.	① Check if drain-up machine works. ② Check drain function. ③ Check the setting of lead wire of drain sensor and check clogs of the filter. ④ Replace indoor controller board if drain pump operates with the line of drain sensor connector CN31-① and ② is short-circuited and abnormality reappears. Refer to 7-7. Turn the power off, and on again to operate after check.

Error Code	Meaning of error code and detection method	Cause	Countermeasure
P6	**Freezing/overheating protection is working** ① Freezing protection (Cooling mode) The unit is in six-minute resume prevention mode if pipe temperature stays under -15℃ for three minutes, three minutes after the compressor started. Abnormal if it stays under -15℃ for three minutes again within 16 minutes after six-minute resume prevention mode. <Frost prevention mode> If pipe temperature is 1℃ or below when 16 minutes has passed after compressor starts operating, unit will start operating in frost prevention mode which stops compressor operation. After that, when pipe temperature stays 10℃ or more for 3 minutes, frost prevention mode will be released and compressor will restart its operation.	(Cooling or drying mode) ① Clogged filter (reduced airflow) ② Short cycle of air path ③ Low-load (low temperature) operation beyond the tolerance range ④ Defective indoor fan motor • Fan motor is defective. • Indoor controller board is defective. ⑤ Defective outdoor fan control ⑥ Overcharge of refrigerant ⑦ Defective refrigerant circuit (clogs)	(Cooling or drying mode) ① Check clogs of the filter. ② Remove shields. ④ Measure the resistance of fan motor's winding. Measure the output voltage of fan's connector (FAN) on the indoor controller board. ※The indoor controller board should be normal when voltage of AC 220~240V is detected while fan motor is connected. Refer to 7-7. ⑤ Check outdoor fan motor. ⑥⑦ Check operating condition of refrigerant circuit.
P8	**Abnormality of pipe temperature** <Cooling mode> Detected as abnormal when the pipe temperature is not in the cooling range 3 minutes later of compressor start and 6 minutes later of the liquid pipe is out of cooling range. Note 1) It takes at least 9 min. to detect. Note 2) Abnormality P8 is not detected in drying mode. Cooling range : -5 deg ≧ (TH2-TH1) TH2: Liquid pipe temperature TH1: Intake temperature	① Slight temperature difference between indoor room temperature and pipe temperature thermistor • Shortage of refrigerant • Disconnected holder of pipe thermistor • Defective refrigerant circuit ② Converse connection of extension pipe (on plural units connection) ③ Converse wiring of indoor/outdoor unit connecting wire (on plural units connection) ④ Defective detection of indoor room temperature and pipe temperature thermistor ⑤ Stop valve is not opened completely.	①~④ Check pipe temperature with room temperature display on remote controller. ②③Check converse connection of extension pipe or converse wiring of indoor/outdoor unit connecting wire.
	Abnormality in outdoor unit	① Wrong wiring of indoor/outdoor connecting wire ② Reversed phase ③ Protection device is working ④ Damaged outdoor coil thermistor	① Check the indoor/outdoor connecting wire. ② Change the connection of electric wiring. ③ Check the protection device. ④ Measure the resistance of the outdoor coil thermistor. If the resistance is normal, replace the outdoor controller board.

Error Code	Meaning of error code and detection method	Cause	Countermeasure
E0 or E4	**Remote controller transmission error(E0)/signal receiving error(E4)** ① Abnormal if main or sub remote controller can not receive normally any transmission from indoor unit of refrigerant address “0” for three minutes. (Error code : E0) ② Abnormal if sub remote controller could not receive for any signal for two minutes. (Error code: E0) ① Abnormal if indoor controller board can not receive normally any data from remote controller board or from other indoor controller board for three minutes. (Error code: E4) ② Indoor controller board cannot receive any signal from remote controller for two minutes. (Error code: E4)	① Contact failure at transmission wire of remote controller ② All remote controllers are set as “sub” remote controller. In this case, E0 is displayed on remote controller, and E4 is displayed at LED (LED1, LED2) on the outdoor controller circuit board. ③ Mis-wiring of remote controller. ④ Defective transmitting receiving circuit of remote controller ⑤ Defective transmitting receiving circuit of indoor controller board of refrigerant address “0”. ⑥ Noise has entered into the transmission wire of remote controller.	① Check disconnection or looseness of indoor unit or transmission wire of remote controller. ② Set one of the remote controllers “main”. If there is no problem with the action above. ③ Check wiring of remote controller. • Total wiring length: max.500m (Do not use cable x 3 or more) • The number of connecting indoor units: max.16units • The number of connecting remote controller: max.2units When it is not the above-mentioned problem of ①~③ ④ Diagnose remote controllers. a) When “RC OK” is displayed, Remote controllers have no problem. Put the power off, and on again to check. If abnormality generates again, replace indoor controller board. b) When “RC NG” is displayed, Replace remote controller. c) When “RC E3” is displayed, d) When “ERC 00-06” is displayed, [c),d)→Noise may be causing abnormality.] ＊ If the unit is not normal after replacing indoor controller board in group control, indoor controller board of address “0” may be abnormal.
E3 or E5	**Remote controller transmission error(E3)/signal receiving error(E5)** ① Abnormal if remote controller could not find blank of transmission path for six seconds and could not transmit. (Error code: E3) ② Remote controller receives transmitted data at the same time, compares the data, and when detecting it, judges different data to be abnormal 30 continuous times. (Error code: E3) ① Abnormal if indoor controller board could not find blank of transmission path. (Error code: E5) ② Indoor controller board receives transmitted data at the same time, compares the data,and when detecting it, judges different data to be abnormal 30 continuous times. (Error code: E5)	① Two remote controller are set as “main.” (In case of 2 remote controllers) ② Remote controller is connected with two indoor units or more. ③ Repetition of refrigerant address. ④ Defective transmitting receiving circuit of remote controller. ⑤ Defective transmitting receiving circuit of indoor controller board. ⑥ Noise has entered into transmission wire of remote controller.	① Set a remote controller to main, and the other to sub. ② Remote controller is connected with only one indoor unit. ③ The address changes to a separate setting. ④~⑥ Diagnose remote controller. a) When “RC OK”is displayed, remote controllers have no problem. Put the power off,and on again to check. When becoming abnormal again, replace indoor controller board. b)When “RC NG”is displayed, replace remote controller. c)When “RC E3”or “ERC 00-66”is displayed, noise may be causing abnormality.

Error Code	Meaning of error code and detection method	Cause	Countermeasure
Fb	**Abnormality of indoor controller board** Abnormal if data cannot be normally read from the nonvolatile memory of the indoor controller board.	① Defective indoor controller board.	① Replace indoor controller board.
E1 or E2	**Abnormality of remote controller control board** ① Abnormal if data cannot be normally read from the nonvolatile memory of the remote controller control board. (Error code: E1) ② Abnormal if the clock function of remote controller cannot be normally operated. (Error code: E2)	① Defective remote controller.	① Replace remote controller.
PA (2502) (2500)	**Forced compressor stop (due to water leakage abnormality)** ① When the intake temperature subtracted with liquid pipe temperature is less than -10℃, drain sensor is detected whether it is soaked in the water or not at the interval of 90 seconds. (Drain pump will start operating when the drain sensor is detected to be soaked in the water.) ② The unit has a water leakage abnormality when the following conditions, a and b, are satisfied while the above-mentioned detection is performed. a) The drain sensor is detected to be soaked in the water 10 times in a row. b) The intake temperature subtracted with liquid pipe temperature is detected to be less than -10℃ for a total of 30 minutes. (When the drain sensor is detected to be NOT soaked in the water, the detection record of a and b will be cleared.) ③ The drain sensor detection is performed in operations other than cooling. (When the unit stops operating, during heating or fan operation, when the unit stops because of some abnormality) *Once the water leakage abnormality is detected, abnormality state will not be released until the main power is reset.	① Drain pump trouble ② Drain defective · Drain pump clogging · Drain pipe clogging ③ Open circuit of drain sensor side heater ④ Contact failure of drain sensor connector ⑤ Dew condensation on drain sensor · Drain water descends along lead wire. · Drain water waving due to filter clogging. ⑥ Extension piping connection difference at twin, triple, quadruple system. ⑦ Mis-wiring of indoor/ outdoor connecting at twin, triple, quadruple system. ⑧ Room temperature thermistor / liquid pipe temperature thermistor detection is defective.	①Check the drain pump. Performance ②Please confirm whether water can be drained. ③Confirm the resistance of the drain sensor side heater. ④Check the connector contact failure. ⑤ Check the drain sensor leadwire mounted. Check the filter clogging ⑥Check the piping connection. ⑦Check the indoor/ outdoor connecting wires. ⑧Check the room temperature display of remote controller. Check the indoor liquid pipe temperature display of outdoor controller board.

7-4. TROUBLESHOOTING BY INFERIOR PHENOMENA

Phenomena	Cause	Countermeasure
(1)LED2 on indoor controller board is off.	• When LED1 on indoor controller board is also off. ① Power supply of 220~240V AC is not supplied to indoor unit.	① Check the voltage of indoor power supply terminal block (L,N). • When AC220~240V is not detected. Check the power supply wiring. • When AC220~240V is detected. -Check ② (below).
	② Defective indoor controller board.	② Check voltage output from CNDK on indoor controller board. • When AC220~240V is not detected. Check the fuse on indoor controller board. Check the wiring connection between indoor power supply terminal block and CND on indoor controller board. • When AC220~240V is detected. -Check ③ (below).
	③ Defective indoor power board.	③ Check voltage output from CN2S on indoor power board. • When no voltage output. Check the wiring connection between CNDK on indoor controller board and CNSK on indoor power board. If no problem are found,indoor power board is defective. • When DC12.5~13.7V is detected. Check the wiring connection between CN2S on indoor power board and CN2D on indoor power board. If no problem are found,indoor controller board is defective.
	• When LED1 on indoor controller board is lit. ① Mis-setting of main/sub for indoor unit (There is no unit corresponding to main unit.)	① Reconfirm the setting of main/sub for indoor unit Set the main unit. Set main/sub using SW5-3 on indoor controller board.
(2)LED2 on indoor controller board is blinking.	• When LED1 on indoor controller board is also blinking. Connection failure of indoor/outdoor unit connecting wire	Check indoor/outdoor unit connecting wire for connection failure.
	• When LED1 is lit. ① Mis-wiring of remote controller wires When 2 indoor units are wired in one refrigerant system, each indoor unit sets main unit. (SW5-3)	① Check the connection of remote controller wires in case of twin triple indoor unit system. When 2 or more indoor units are wired in one refrigerant system, connect remote controller wires to one of those units.
	② Short-cut of indoor/outdoor unit connecting wire.	② Remove indoor/outdoor connecting wires and check LED2 on indoor controller board. • When LED2 is blinking, check the short-cut of indoor/outdoor connecting wires. • When LED2 is lit, connect indoor/outdoor connecting wires again, and; if LED2 is blinking, outdoor unit's controller board is defective; if LED2 is lit, connection failure of indoor/outdoor terminal block etc. has returned to normal.
	③ Short-cut of remote controller wires ④ Defective remote controller	③④ Remove remote controller wires and check LED2 on indoor controller board. • When LED2 is blinking, check the short-cut of remote controller wires. • When LED2 is lit, connect remote controller wires again and: if LED2 is blinking, remote controller is defective; if LED2 is lit, connection failure of remote controller terminal block etc. has returned to normal.

Phenomena	Cause	Countermeasure
(3)Upward/downward vane performance failure	① The vane is not downward during defrosting and heat preparation and when the thermostat is OFF in HEAT mode. (Working of COOL protection function) ② Vane motor does not rotate. • Defective vane motor • Breaking of wire or connection failure of connector • Up/down vane setting is “No vanes”. ③ Upward/downward vane does not work. • The vane is set to fixed position.	① Normal operation (The vane is set to horizontal regardless of remote control.) ② Check ② (left). • Check the vane motor. (Refer to “How to check the parts”.) • Check for breaking of wire or connection failure of connector. • Check “Up/down vane setting”. (Unit function selection by remote controller). ③ Normal operation (Each connector on vane motor side is disconnected.)
(4)Receiver for wireless remote controller	① Weak batteries of wireless remote controller. ② Contact failure of connector (CNB) on wireless remote controller board. (Insert failure) ③ Contact failure of connector (CN90) on indoor controller board.(Insert failure) ④ Contact failure of connector between wireless remote controller board and indoor controller board.	① Replace batteries of wireless remote controller. ②~④ Check contact failure of each connector. If no problems are found of connector, replace indoor controller board. When the same trouble occurs even if indoor controller board is replaced, replace wireless remote controller board.

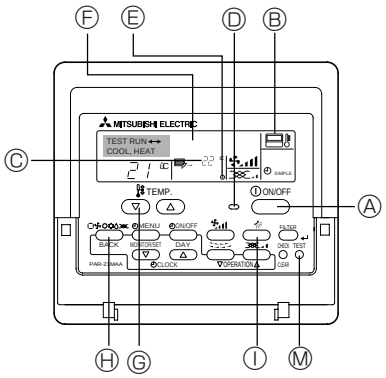
7-5. TEST RUN AND EMERGENCY OPERATION

7-5-1. Before test run

- **After completing installation and the wiring and piping of the indoor and outdoor units, check for refrigerant leakage, looseness in the power supply or control wiring, wrong polarity, and no disconnection of one phase in the supply.**
- **Use a 500-volt megohmmeter to check that the resistance between the power supply terminals and ground is at least 1.0MΩ.**
- **Do not carry out this test on the control wiring (low voltage circuit) terminals.**

⚠ **Warning:**
Do not use the air conditioner if the insulation resistance is less than 1.0MΩ.

7-5-2. Test run (Using wired remote controller)



① Turn on the power at least 12 hours before the test run.
② Press the [TEST] button twice. ➜ "TEST RUN" liquid crystal display
③ Press the [Mode selection] button. Make sure that wind is blown out.
④ Press the [Mode selection] button and switch to the cooling mode.
➜ Make sure that cold wind is blown out.
⑤ Press the [Fan speed] button. ➜ Make sure that the wind speed is switched.
⑥ Check operation of the outdoor unit fan.
⑦ Release test run by pressing the [ON/OFF] button. ➜ Stop
⑧ Register a telephone number.
The telephone number of the repair shop, sales office, etc., to contact if an error occurs can be registered in the remote controller. The telephone number will be displayed when an error occurs. For registration procedures, refer to the operation manual for the indoor unit.

Ⓐ ON/OFF button
Ⓑ Test run display
Ⓒ Indoor temperature liquid line temperature display
Ⓓ ON/OFF lamp
Ⓔ Power display
Ⓕ Error code display
Test run remaining time display
Ⓖ Set temperature button
Ⓗ Mode selection button
Ⓘ Fan speed button
Ⓜ TEST button

7-5-3. When wired remote controller or indoor unit micro computer troubles

1.When the wired remote control or the indoor unit microcomputer has failed,but all other components work if you set the switch(SWE,SW6) on the indoor control board,the indoor unit will begin properly Emergency Operation.

2.When you activate emergency operation of the cooling, you have to set the connector(SWE) and switch(SW6)on the indoor controller.

SWE:ON • Indoor fan is running high speed.

SW6-1:ON • Emergency operation of cooling mode.

3.Before you activate emergency operation,check the following points:

(1)Emergency operation cannot be activated when:

- the outdoor unit malfunctions.
- the indoor fan malfunctions.

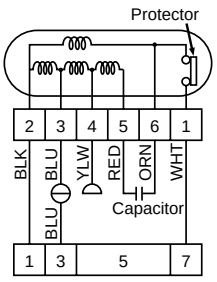
(2)Emergency operation becomes continuous only by switching the power source on/off. ON/OFF on the remote control or temperature control etc. does not function.

(3)Emergency cooling should be limited to 10 hours maximum (The indoor unit heat exchanger may freeze).

(4)After emergency operation has been deactivated,set the switches etc. to their original positions.

7-6. HOW TO CHECK THE PARTS

PE-3EAK.TH PE-4EAK.TH PE-5EAK.TH PE-6EAK.TH
PE-3EAK.TH-U PE-4EAK.TH-U PE-5EAK.TH-U PE-6EAK.TH-U

<table>
<tr><th>Parts name</th><th>Check points</th></tr>
<tr><td>Room temperature thermistor (TH1)
Indoor coil thermistor (TH2)</td><td>Disconnect the connector, then measure the resistance using a tester.
(Surrounding temperature 10°C~30°C)
<table><tr><th>Normal</th><th>Abnormal</th></tr><tr><td>4.3kΩ~9.6kΩ</td><td>Open or short</td></tr></table>(Refer to the thermistor)</td></tr>
<tr><td>Fan motor
 
</td><td>Measure the resistance between the terminals using a tester.
(Surrounding temperature 20°C)
<table><tr><th rowspan="3">Motor terminal
or
Relay connector</th><th colspan="3">Normal</th><th rowspan="2">Abnormal</th></tr><tr><th colspan="3">PE-EAK.TH(-U)</th></tr><tr><th>3</th><th>4</th><th>5, 6</th></tr><tr><td>WHT-BLK</td><td>46.38Ω</td><td>20.63Ω</td><td>15.26Ω</td><td rowspan="4">Open or short</td></tr><tr><td>BLK-BLU</td><td>17.25Ω</td><td>8.05Ω</td><td>5.118Ω</td></tr><tr><td>BLU-YLW</td><td rowspan="2">18.37Ω
(BLU-RED)</td><td>3.18Ω</td><td>2.648Ω</td></tr><tr><td>YLW-RED</td><td>16.02Ω</td><td>14.49Ω</td></tr></table></td></tr>
</table>

<Thermistor Characteristic graph>

Thermistor for lower temperature

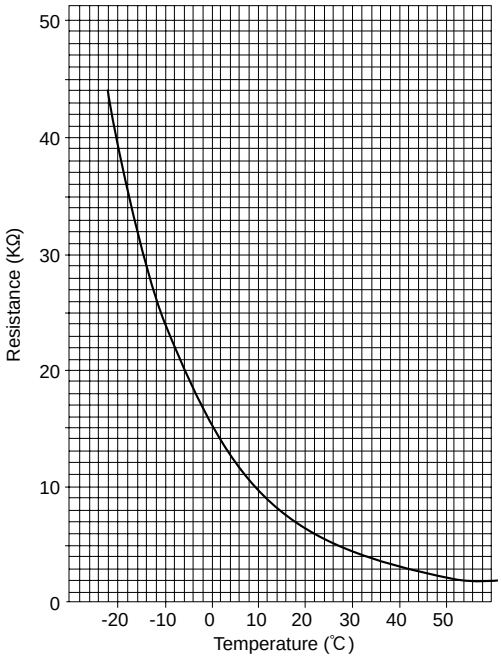
Room temperature thermistor(TH1)
Indoor coil thermistor(TH2)

Thermistor R_0=15kΩ ± 3%
Fixed number of B=3480 ± 2%

$$Rt=15\exp\{3480(\frac{1}{273+t}-\frac{1}{273})\}$$

0℃ 15kΩ
10℃ 9.6kΩ
20℃ 6.3kΩ
25℃ 5.2kΩ
30℃ 4.3kΩ
40℃ 3.0kΩ

< Thermistor for lower temperature >

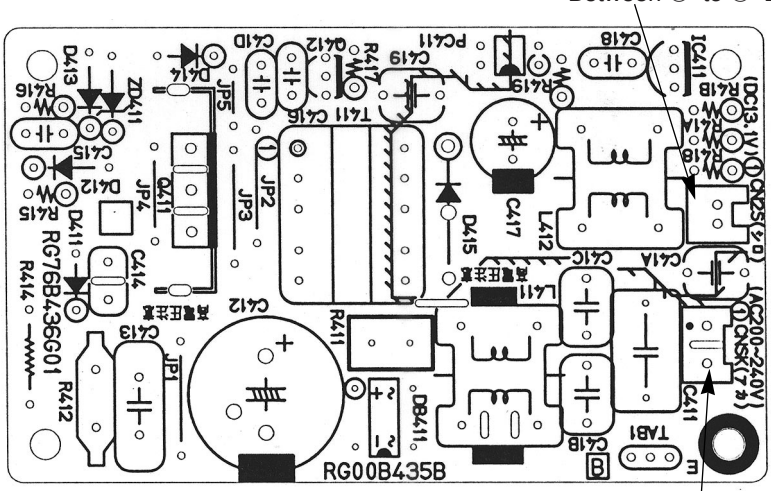


7-7. TEST POINT DIAGRAM

7-7-1. Power board

PE-3EAK.TH PE-4EAK.TH PE-5EAK.TH PE-6EAK.TH
PE-3EAK.TH-U PE-4EAK.TH-U PE-5EAK.TH-U PE-6EAK.TH-U

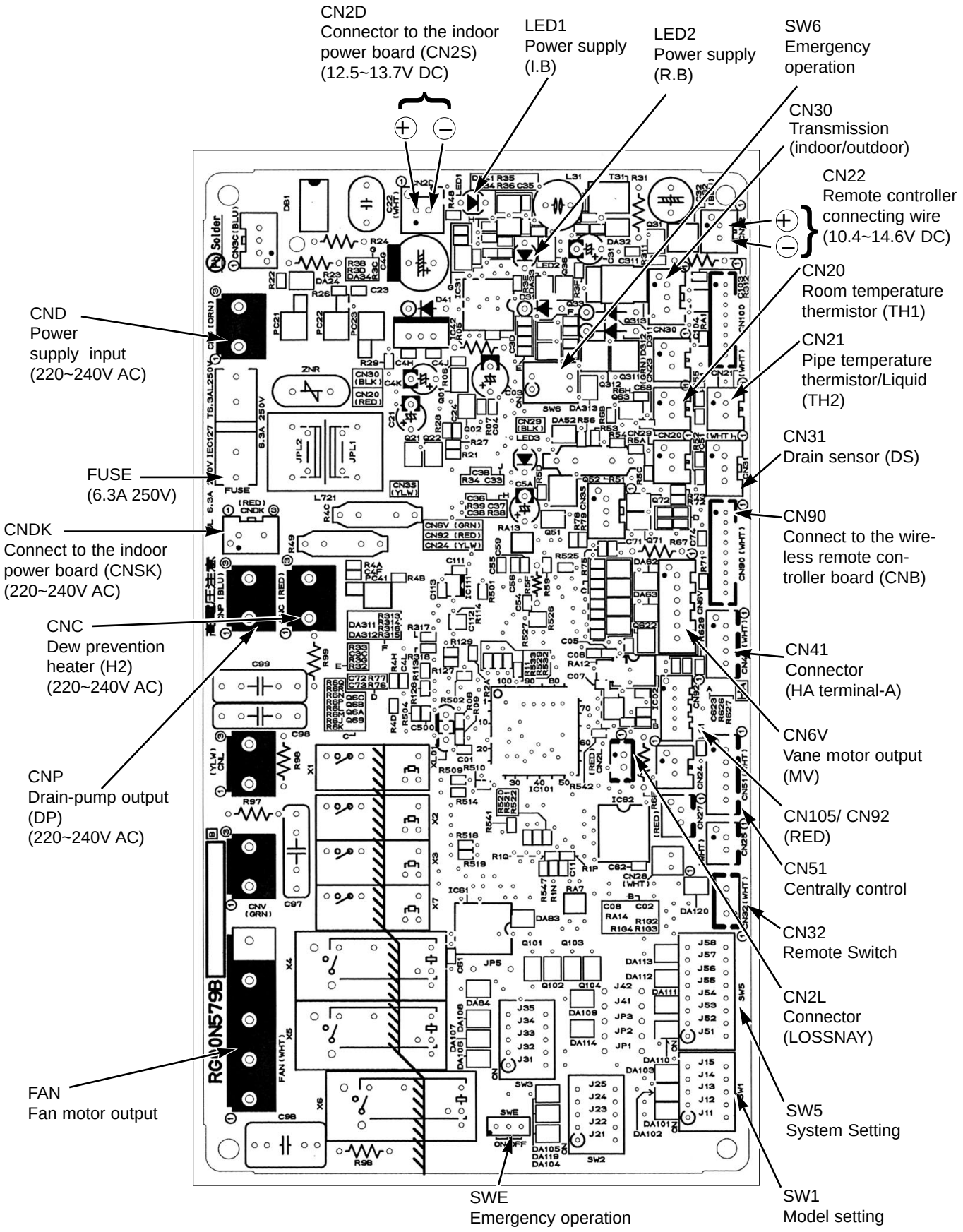
CN2S
Connect to the indoor controller board (CN2D)
Between ① to ③ 12.6-13.7V DC (Pin① (+))



CNSK
Connect to the indoor controller board (CNDK)
Between ① to ③ 220-240V AC

7-7-2. Indoor controller board

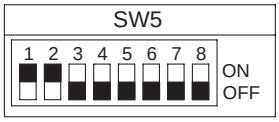
PE-3EAK.TH PE-4EAK.TH PE-5EAK.TH PE-6EAK.TH
PE-3EAK.TH-U PE-4EAK.TH-U PE-5EAK.TH-U PE-6EAK.TH-U



7-8. FUNCTIONS OF DIP SWITCH AND JUMPER WIRE

Each function is controlled by the dip switch and the jumper wire on control p.c. board.

(Marks in the table below) Jumper wire (○ : Short × : Open)

<table>
<tr><th>Jumper wire</th><th>Functions</th><th>Setting by the dip switch and jumper wire</th><th>Remarks</th></tr>
<tr><td>SW1</td><td>Model settings</td><td>
</td><td></td></tr>
<tr><td>SW5</td><td>System settings</td><td> 
</td><td>SW5-3 Main/Sub setting
OFF : Main ON : Sub
SW5-4 Rotaion operation setting
OFF : Not avairable ON : avairable</td></tr>
<tr><td>J41
J42</td><td>Pair number setting with wireless remote controller</td><td><table>
<tr><th rowspan="2">Wireless remote controller setting</th><th colspan="2">Control PCB setting</th></tr>
<tr><th>J41</th><th>J42</th></tr>
<tr><td>0</td><td>○</td><td>○</td></tr>
<tr><td>1</td><td>×</td><td>○</td></tr>
<tr><td>2</td><td>○</td><td>×</td></tr>
<tr><td>3 ~ 9</td><td>×</td><td>×</td></tr>
</table></td><td><Settings at time of factory shipment>
Wireless remote controller: 0
Control PCB:○ (for both J41 and J42)
Four pair number settings are supported.
The pair number settings of the wireless remote controller and indoor control PCB (J41/J42) are given in the table on the left.
('×' in the table indicates the jumper line is disconnected.)</td></tr>
</table>

8 FUNCTION SETTING

8-1. UNIT FUNCTION SETTING BY THE REMOTE CONTROLLER

Each function can be set according to necessity using the remote controller. The setting of function for each unit can only be done by the remote controller. Select function available from the table 1.

(1) Functions available when setting the unit number to 00 (Select 00 referring to ④ setting the indoor unit number.)

※1 The functions below are available only when the wired remote controller is used.The functions are not available for floor standing models.

<Table 1> Function selections

Function	Settings	Mode No.	Setting No.	Initial setting (when sent from the factory)	Remarks
Power failure automatic recovery	OFF	01	1	●	The setting is applied to all the units in the same refrigerant system.
	ON		2		
Indoor temperature detecting	Indoor unit's (Main) internal sensor	02	1	●	
			2		
	Remote controller's internal sensor ※1		3		
LOSSNAY connectivity	Not supported	03	1	●	
	Supported (indoor unit not equipped with outdoor air intake)		2		
	Supported (indoor unit equipped with outdoor air intake)		3		
Power supply voltage	240V	04	1		
	220V,230V		2	●	
Frost prevention temperature	1℃ (Normal)	15	1	●	
	-3℃		2		
Humidifier control	When the compressor operates, the humidifier also operates.	16	1	●	
	When the fan operates, the humidifier also operates.		2		
Rotation	24h cycle	20	1		
	168h cycle		2		
	Back up function		3	●	

(2) Functions available when setting the unit number to 01-02 or AL (07 in case of wireless remote controller)

- When setting functions for an indoor unit in an independent system, set the unit number to 01 referring to ④ setting the indoor unit number.
- When setting functions for a simultaneous Twin-indoor unit system, set the unit number to 01 to 02 for each indoor unit in case of selecting different functions for each unit referring to ④ setting the indoor unit number.
- When setting the same functions for an entire simultaneous Twin-indoor unit system, set refrigerant address to AL (07 in case of wireless remote controller) referring to ④ setting the indoor unit number.

Function	Settings	Mode No.	Setting No.	Initial setting (Factory setting) - : Not available					
				4-Way cassette		Ceiling concealed	Ceiling suspended	Wall mounted	Floor standing
				PL-AAK	PL-KAK	PE-EAK	PC-GAK	PK-GAKL PK-FAKL	PS-GAK
Filter sign	100Hr	07	1					●	
	2500Hr		2	●	●		●		●
	No filter sign indicator		3			●			
Air flow (Fan speed)	Quiet / Standard (PL-AAK)	08	1	●		-		-	-
	Standard / High ceiling① (PL-AAK)		2		●	-	●	-	-
	High ceiling / High ceiling② (PL-AAK)		3			-		-	-
No.of air outlets	4 directions	09	1	●	●	-	-	-	-
	3 directions		2			-	-	-	-
	2 directions		3		-	-	-	-	-
Optional high efficiency filter	Not supported	10	1	●	●	-	●	-	-
	Supported		2			-		-	-
Vane setting	No vanes (Vane No.3 setting:PL-AAKonly)	11	1			-		-	-
	Vane No.1 setting		2	●	●	-	●	-	-
	Vane No.2 setting		3			-		-	-
Energy saving air flow (Heating mode)	Disabled	12	1	●	●	-	●	-	-
	Enabled		2			-		-	-
Optional humidifier (PLH-AAK(H) only)	Not supported	13	1	●	-	-	-	-	-
	Supported		2		-	-	-	-	-
Vane differential setting in heating mode (cold wind prevention)	No.1 setting (TH2: 24-28℃)	14	1			-			-
	No.2 setting (Standard, TH2:28-32℃)		2	●	●	-	●	●	-
	No.3 setting (TH2: 32-38℃)		3			-			-
Swing	Not available	23	1			-			-
	Available		2	●	●	-	●	●	-
Quiet operation mode of PL-AAK(Fan speed)	Disabled (Standard)	26	1	●	-	-	-	-	-
	Enabled (Quiet operation mode)		2		-	-	-	-	-
Fan speed when the cooling thermostat is OFF	Set fan speed	27	1	●	●	●	●	●	●
	Stop		2						
Detection of abnormality of the pipe temperature (P8)	Available	28	1	●	●	●	●	●	●
	Not available		2						

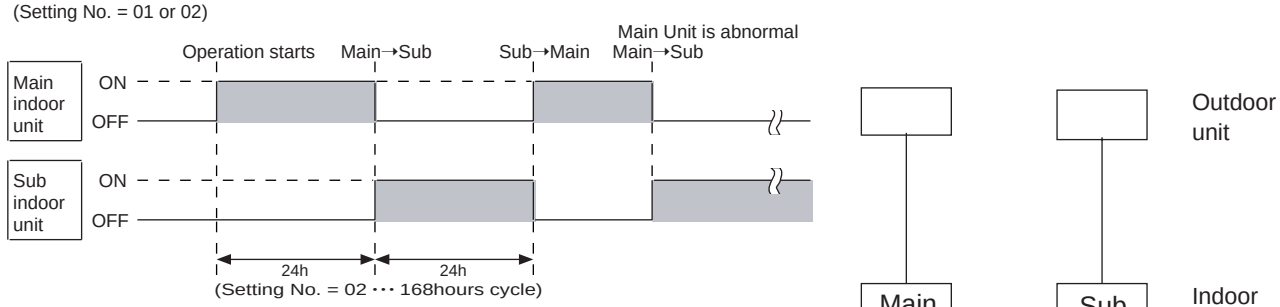
Rotation setting (Function setting mode No.20)

Function setting		Features	Indoor controller board	
Mode No.	Setting No.		SW5-3 setting	SW5-4 setting
20	01 (24hours cycle)	Each system operates alternately for 24hours.	OFF : Main ON : Sub	ON
	02 (168hours cycle)	Each system operates alternately for 168hours.		
	03 (Back up function)	When abnormality occurs while operating, it changes as a back up unit, and operating continues.		

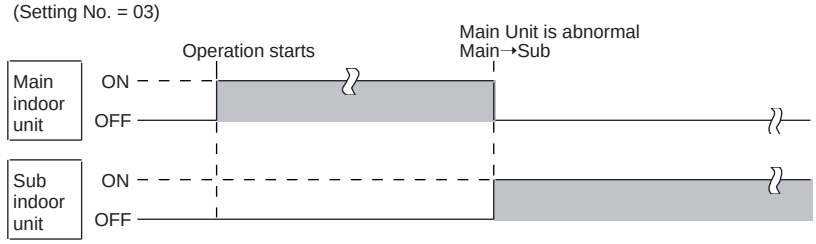
This system can correspond only by the pattern of two refrigerant group by 1 : 1 (indoor and outdoor unit combination) systems.

Example of unit's operation

(Setting No. = 01 or 02)



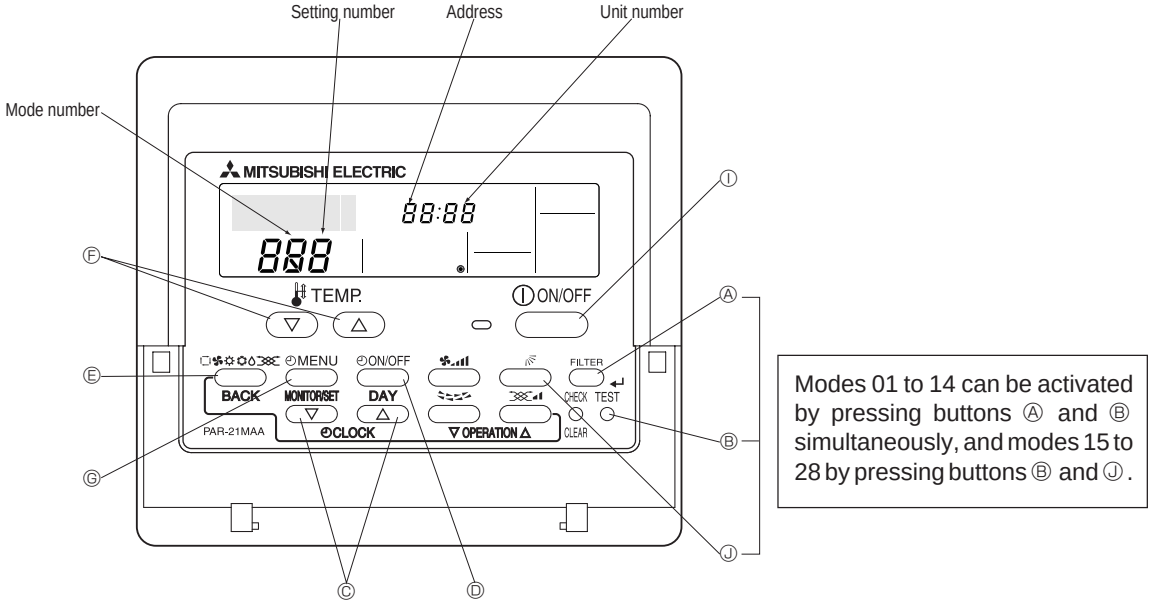
(Setting No. = 03)



8-1-1. Selecting functions using the wired remote controller

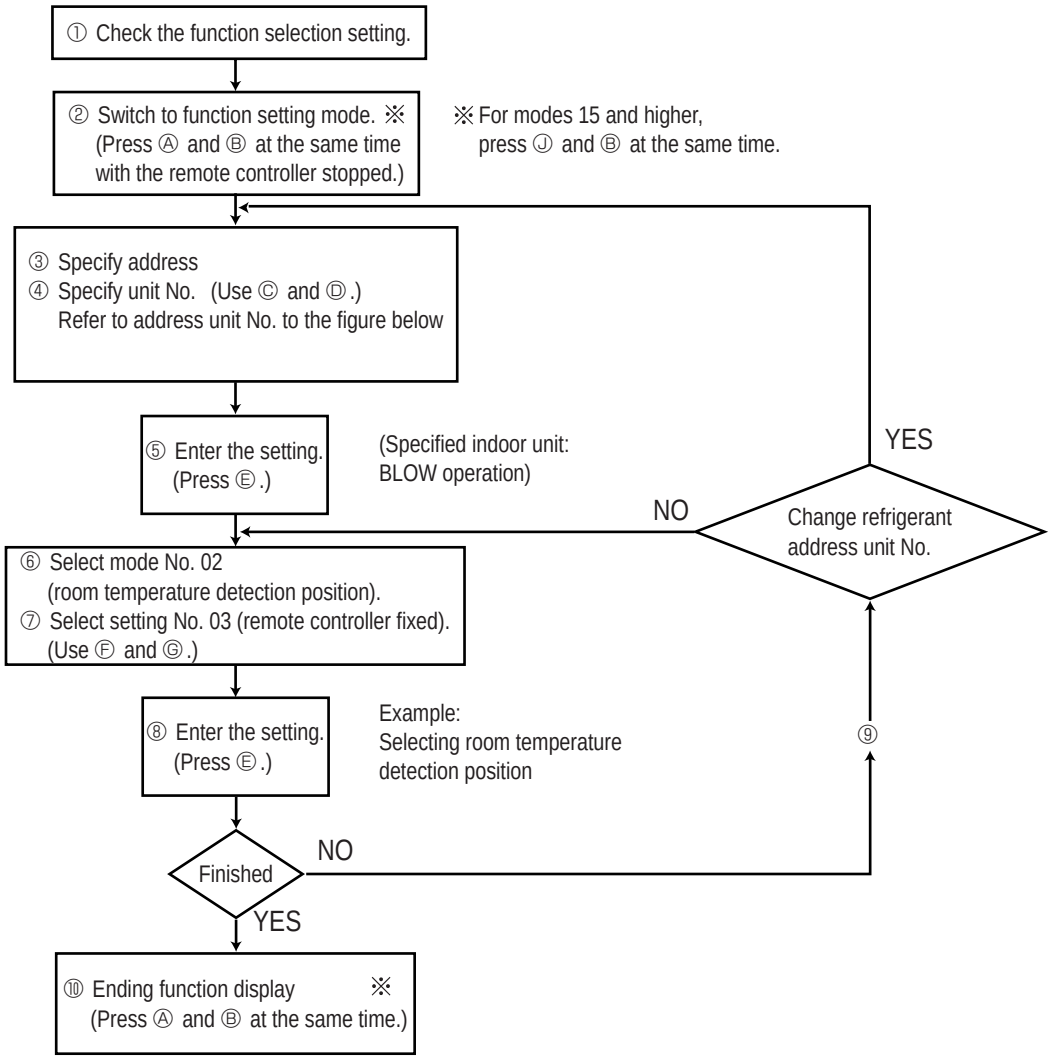
First, try to familiarize yourself with the flow of the function selection procedure. In this section, an example of setting the room temperature detection position is given.

For actual operations, refer to steps ① to ⑩.



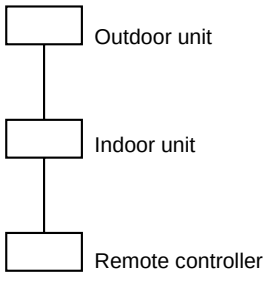
Modes 01 to 14 can be activated by pressing buttons Ⓐ and Ⓑ simultaneously, and modes 15 to 28 by pressing buttons Ⓑ and Ⓙ.

Selecting functions using the wired remote controller


① Check the function selection setting.
② Switch to function setting mode. ※
(Press Ⓐ and Ⓑ at the same time
with the remote controller stopped.)
※ For modes 15 and higher,
press Ⓙ and Ⓑ at the same time.
③ Specify address
④ Specify unit No. (Use Ⓒ and Ⓓ.)
Refer to address unit No. to the figure below
⑤ Enter the setting.
(Press Ⓔ.)
(Specified indoor unit:
BLOW operation)
YES
NO
Change refrigerant
address unit No.
⑥ Select mode No. 02
(room temperature detection position).
⑦ Select setting No. 03 (remote controller fixed).
(Use Ⓕ and Ⓖ.)
⑧ Enter the setting.
(Press Ⓔ.)
Example:
Selecting room temperature
detection position
⑨
Finished
NO
YES
⑩ Ending function display ※
(Press Ⓐ and Ⓑ at the same time.)

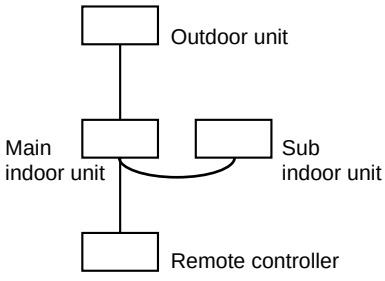
The above procedure must be carried out only if changes are necessary.

1 : 1 system



Indoor unit
address = 00
unit No. = 01

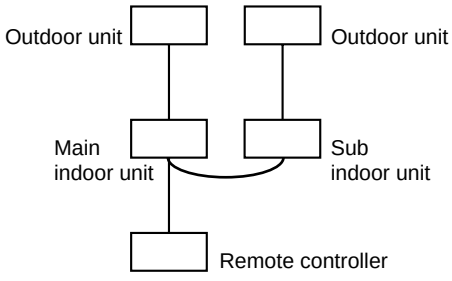
Simultaneous twin system



Main indoor unit
address = 00
unit No. = 01

Sub indoor unit
address = 01
unit No. = 02

Rotation system



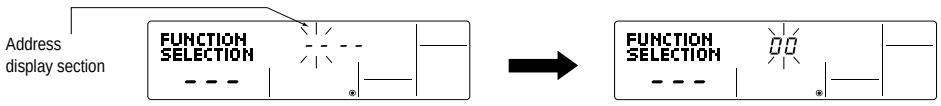
Main indoor unit
address = 00
unit No. = 01

Sub indoor unit
address = 01
unit No. = 01

[Operating Procedure]

① Check the setting items provided by function selection.
If settings for a mode are changed by function selection, the functions of that mode will be changed accordingly. Check all the current settings according to steps ② to ⑦, fill in the "Check" column in Table 1, and then change them as necessary. For factory settings, refer to the indoor unit's installation manual.

② Switch off the remote controller.
Ⓐ Hold down the FILTER (mode 15 or more) and Ⓑ TEST buttons simultaneously for at least two seconds. FUNCTION SELECTION will start to flash, and then the remote controller's display content will change as shown below.

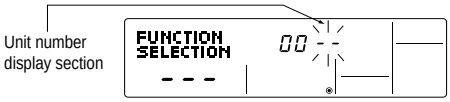


* If the unit stops after FUNCTION SELECTION flashed for two seconds or "88" flashes in the room temperature display area for two seconds, a transmission error may have occurred. Check to see if there are any sources of noise or interference near the transmission path.

Note If you have made operational mistakes during this procedure, exit function selection (see step ⑩), and then restart from step ②.

③ Set the outdoor address.
Ⓒ Press the [CLOCK] buttons (and) to select the desired address. The address changes from "00" to "15".

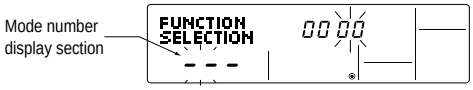
④ Set the indoor unit number.
Ⓓ Press the ON/OFF button so that "- -" flashes in the unit number display area.



Ⓒ Press the [CLOCK] buttons (and) to select the unit number of the indoor unit for which you want to perform function selection. The unit number changes to "00", "01", "02","03",04" and "AL" each time a button is pressed.

* To set modes 01 to 06 or 15 to 22 select unit number "00".
* To set modes 07 to 14 or 23 to 28 carry out as follows:
- To set each indoor unit individually, select "01" to "04".
- To set all the indoor units collectively, select "AL".

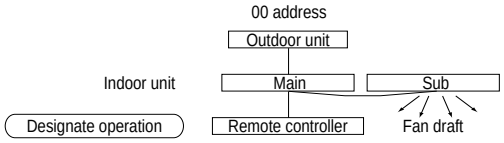
⑤ Confirm the address and unit number.
Ⓔ Press the MODE button to confirm the address and unit number.
After a while, "- - " will start to flash in the mode number display area.



* "88" will flash in the room temperature display area if the selected address does not exist in the system.
Furthermore, if "F" appears and flashes in the unit number display area and the address display area also flashes, there are no units that correspond to the selected unit number. In this case, the address and unit number may be incorrect, so repeat steps ② and ③ to set the correct ones.

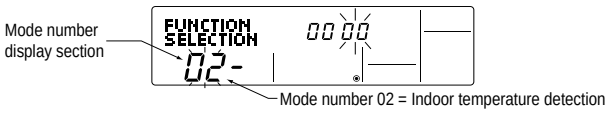
Ⓔ When the address and unit number are confirmed by pressing the MODE button, the corresponding indoor unit will start fan operation. This helps you find the location of the indoor unit for which you want to perform function selection. However, if "00" or "AL" is selected as the unit number, all the indoor units corresponding to the specified address will start fan operation.

Example) When the address is set to 01 and the unit number is 02.

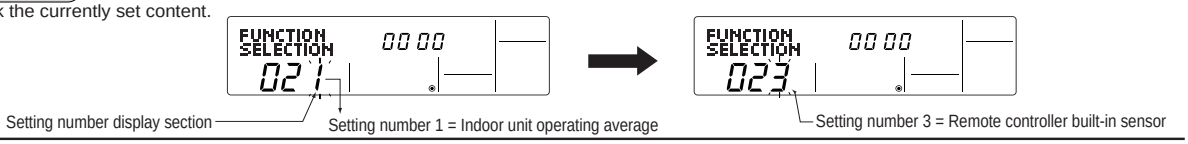


* When grouping different systems, if an indoor unit other than the one to which the address has been set performs fan operation, there may be another address that is the same as the specified one. In this case, check the DIP switch of the outdoor unit to see whether such a address exists.

⑥ Select the mode number.
Ⓕ Press the [TEMP] buttons (and) to set the desired mode number.
(Only the selectable mode numbers can be selected.)



⑦ Select the setting content for the selected mode.
Ⓖ Press the MENU button. The currently selected setting number will flash, so check the currently set content.



Ⓕ Press the [TEMP] buttons (and) to select the desired setting number.

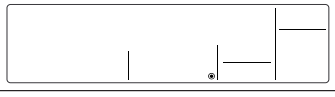
⑧ Register the settings you have made in steps ③ to ⑦.
Ⓔ Press the MODE button. The mode number and setting number will start to flash and registration starts.

The mode number and setting number will stop flashing and remain lit, indicating the end of registration.

* If "- - - " is displayed for both the mode number and setting number and "88" flashes in the room temperature display area, a transmission error may have occurred. Check to see if there are any sources of noise or interference near the transmission path.

⑨ If you wish to continue to select other functions, repeat steps ③ to ⑧.

⑩ Complete function selection.
Ⓐ Hold down the FILTER (mode 15 or more) and TEST buttons simultaneously for at least two seconds.
After a while, the function selection screen will disappear and the air conditioner OFF screen will reappear.



* Do not operate the remote controller for at least 30 seconds after completing function selection. (No operations will be accepted even if they are made.)

Note If a function of an indoor unit is changed by function selection after installation is complete, make sure that a "○" mark, etc., is given in the "Check" column of Table 1 to indicate the change.

8-2. FUNCTION SELECTION OF REMOTE CONTROLLER

The setting of the following remote controller functions can be changed using the remote controller function selection mode.
Change the setting when needed.

Item 1	Item 2	Item 3 (Setting content)
1.Change Language ("CHANGE LANGUAGE")	Language setting to display	• Display in multiple languages is possible.
2.Function limit ("FUNCTION SELECTION")	(1) Operation function limit setting (operation lock) ("LOCKING FUNCTION")	• Setting the range of operation limit (operation lock)
	(2) Use of automatic mode setting ("SELECT AUTO MODE")	• Setting the use or non-use of "automatic" operation mode
	(3) Temperature range limit setting ("LIMIT TEMP FUNCTION")	• Setting the temperature adjustable range (maximum, minimum)
3.Mode selection ("MODE SELECTION")	(1) Remote controller main/sub setting ("CONTROLLER MAIN/SUB")	• Selecting main or sub remote controller * When two remote controllers are connected to one group, one controller must be set to sub.
	(2) Use of clock setting ("CLOCK")	• Setting the use or non-use of clock function
	(3) Timer function setting ("WEEKLY TIMER")	• Setting the timer type
	(4) Contact number setting for error situation ("CALL.")	• Contact number display in case of error • Setting the telephone number
4.Display change ("DISP MODE SETTING")	(1) Temperature display ℃/°F setting ("TEMP MODE ℃/°F")	• Setting the temperature unit (℃ or °F) to display
	(2) Suction air temperature display setting ("ROOM TEMP DISP SELECT")	• Setting the use or non-use of the display of indoor (suction) air temperature
	(3) Automatic cooling/heating display setting ("AUTO MODE DISP C/H")	• Setting the use or non-use of the display of "Cooling" or "Heating" display during operation with automatic mode

[Function selection flowchart] Refer to next page.
[1] Stop the air conditioner to start remote controller function selection mode. → [2] Select from item1. → [3] Select from item2. → [4] Make the setting. (Details are specified in item3) → [5] Setting completed. → [6] Change the display to the normal one. (End)

[Detailed setting]

[4] -1. CHANGE LANGUAGE setting

The language that appears on the dot display can be selected.
- Press the [MENU] button to change the language.

① Japanese (JP), ② English (GB), ③ German (D), ④ Spanish (E),
⑤ Russian (RU), ⑥ Italian (I), ⑦ Chinese (CH), ⑧ French (F)

[4] -2. Function limit

(1) Operation function limit setting (operation lock)
- To switch the setting, press the [ON/OFF] button.

① no1 : Operation lock setting is made on all buttons other than the [ON/OFF] button.
② no2 : Operation lock setting is made on all buttons.
③ OFF (Initial setting value) : Operation lock setting is not made

* To make the operation lock setting valid on the normal screen, it is necessary to press buttons (Press and hold down the [FILTER] and [ON/OFF] buttons at the same time for two seconds.) on the normal screen after the above setting is made.

(2) Use of automatic mode setting

When the remote controller is connected to the unit that has automatic operation mode, the following settings can be made.
- To switch the setting, press the [ON/OFF] button.

① ON (Initial setting value) : The automatic mode is displayed when the operation mode is selected.
② OFF : The automatic mode is not display when the operation mode is selected.

(3) Temperature range limit setting

After this setting is made, the temperature can be changed within the set range.
- To switch the setting, press the [ON/OFF] button.

① LIMIT TEMP COOL MODE :
The temperature range can be changed on cooling/dry mode.
② LIMIT TEMP HEAT MODE :
The temperature range can be changed on heating mode.
③ LIMIT TEMP AUTO MODE :
The temperature range can be changed on automatic mode.
④ OFF (initial setting) : The temperature range limit is not active.

* When the setting, other than OFF, is made, the temperature range limit setting on cooling, heating and automatic mode is made at the same time. However the range cannot be limited when the set temperature range has not changed.

- To increase or decrease the temperature, press the [TEMP (▽) or (△)] button.
- To switch the upper limit setting and the lower limit setting, press the [ ] button. The selected setting will flash and the temperature can be set.
- Settable range
  Cooling/Dry mode : Lower limit: 19 ℃ ~ 30℃ Upper limit: 30 ℃ ~ 19℃
  Heating mode : Lower limit: 17 ℃ ~ 28℃ Upper limit: 28 ℃ ~ 17℃
  Automatic mode : Lower limit: 19 ℃ ~ 28℃ Upper limit: 28 ℃ ~ 19℃

[4] -3. Mode selection setting

(1) Remote controller main/sub setting
- To switch the setting, press the [ON/OFF] button.

① Main : The controller will be the main controller.
② Sub : The controller will be the sub controller.

(2) Use of clock setting
- To switch the setting, press the [ON/OFF] button.

① ON : The clock function can be used.
② OFF : The clock function cannot be used.

(3) Timer function setting
- To switch the setting, press the [ON/OFF] button (Choose one of the followings.).

① WEEKLY TIMER (initial setting on MA deluxe):
The weekly timer can be used.
② AUTO OFF TIMER: The auto off timer can be used.
③ SIMPLE TIMER (Default setting on MA smooth):
The simple timer can be used.
④ TIMER MODE OFF: The timer mode cannot be used.

* When the use of clock setting is OFF, the "WEEKLY TIMER" cannot be used.

(4) Contact number setting for error situation
- To switch the setting, press the [ON/OFF] button.

① CALL OFF : The set contact numbers are not displayed in case of error.
② CALL **** *** **** : The set contact numbers are displayed in case of error.
CALL_ : The contact number can be set when the display is as shown on the left.
- Setting the contact numbers

To set the contact numbers, follow the following procedures.
Move the flashing cursor to set numbers. Press the [TEMP. (▽) and (△)] button to move the cursor to the right (left). Press the [CLOCK (▽) and (△)] button to set the numbers.

[4] -4. Display change setting

(1) Temperature display ℃/°F setting
- To switch the setting, press the [ON/OFF] button.

① ℃ : The temperature unit ℃ is used.
② °F: The temperature unit ℉ is used.

(2) Suction air temperature display setting
- To switch the setting, press the [ON/OFF] button.

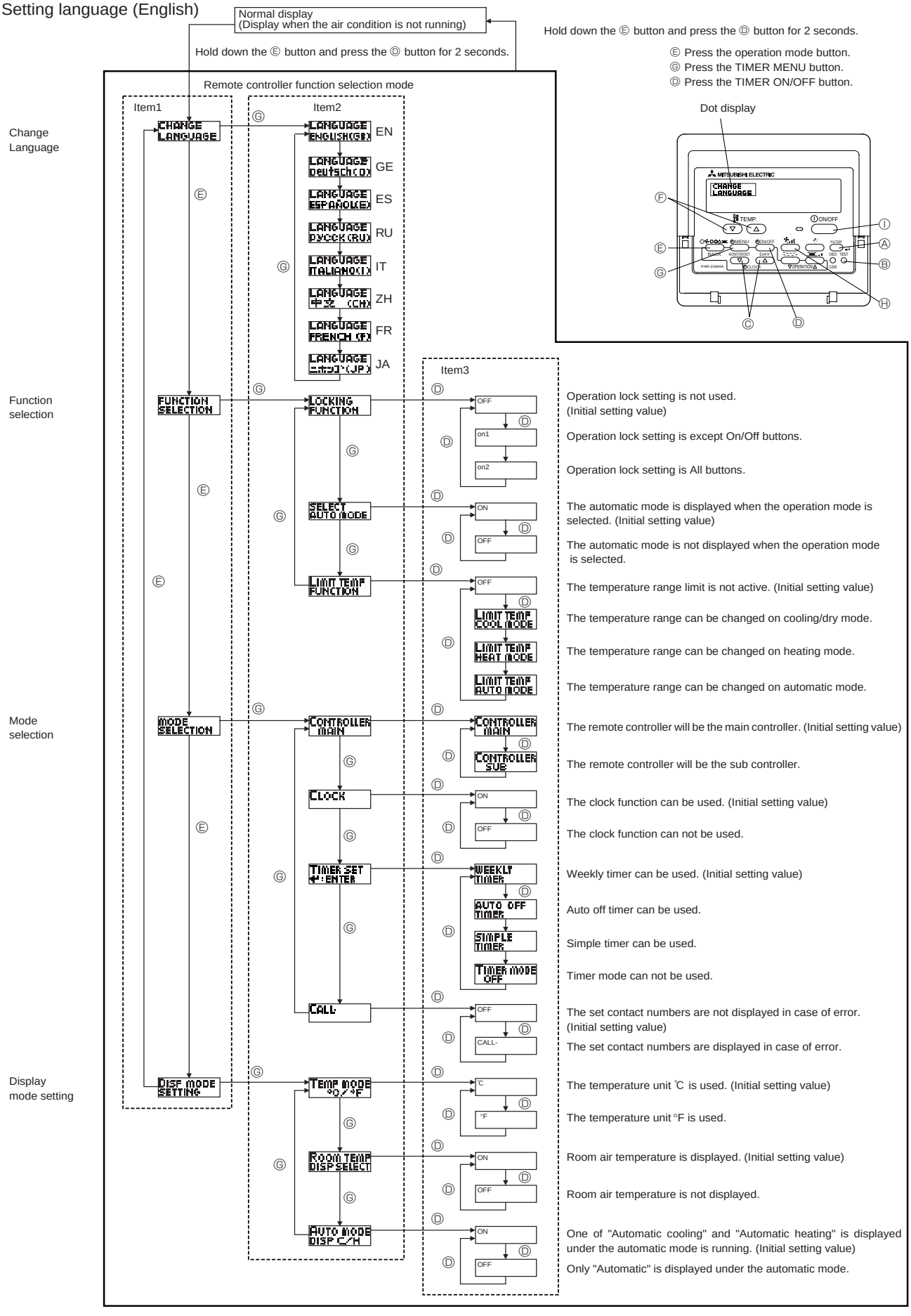
① ON : The suction air temperature is displayed.
② OFF : The suction air temperature is not displayed.

(3) Automatic cooling/heating display setting
- To switch the setting, press the [ON/OFF] button.

① ON : One of "Automatic cooling" and "Automatic heating" is displayed under the automatic mode is running.
② OFF : Only "Automatic" is displayed under the automatic mode.

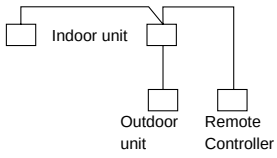
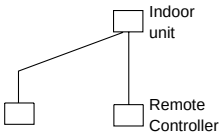
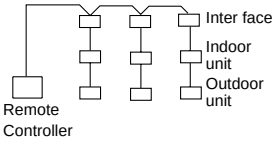
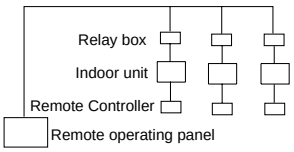
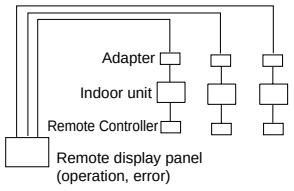
Flowchart of Function Setting

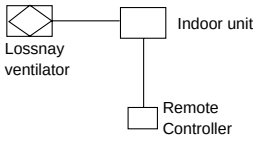
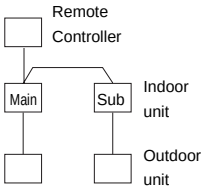
Setting language (English)


Normal display
(Display when the air condition is not running)
Hold down the Ⓔ button and press the Ⓓ button for 2 seconds.
Hold down the Ⓔ button and press the Ⓓ button for 2 seconds.
Ⓔ Press the operation mode button.
Ⓖ Press the TIMER MENU button.
Ⓓ Press the TIMER ON/OFF button.
Dot display
Remote controller function selection mode
Item1
Item2
Item3
Change Language
Function selection
Mode selection
Display mode setting
CHANGE LANGUAGE
LANGUAGE ENGLISH(GB) EN
LANGUAGE Deutsch(DE) GE
LANGUAGE ESPANOL(ES) ES
LANGUAGE РУССКИЙ(RU) RU
LANGUAGE ITALIANO(IT) IT
LANGUAGE 中文 (CHN) ZH
LANGUAGE FRENCH (FR) FR
LANGUAGE 日本語 (JPN) JA
FUNCTION SELECTION
LOCKING FUNCTION
OFF
on1
on2
SELECT AUTO MODE
ON
OFF
LIMIT TEMP FUNCTION
OFF
LIMIT TEMP COOL MODE
LIMIT TEMP HEAT MODE
LIMIT TEMP AUTO MODE
MODE SELECTION
CONTROLLER MAIN
CONTROLLER MAIN
CONTROLLER SUB
CLOCK
ON
OFF
TIMER SET ↵:ENTER
WEEKLY TIMER
AUTO OFF TIMER
SIMPLE TIMER
TIMER MODE OFF
CALL
OFF
CALL-
DISP MODE SETTING
TEMP MODE °C/°F
°C
°F
ROOM TEMP DISP SELECT
ON
OFF
AUTO MODE DISP C/H
ON
OFF
Operation lock setting is not used. (Initial setting value)
Operation lock setting is except On/Off buttons.
Operation lock setting is All buttons.
The automatic mode is displayed when the operation mode is selected. (Initial setting value)
The automatic mode is not displayed when the operation mode is selected.
The temperature range limit is not active. (Initial setting value)
The temperature range can be changed on cooling/dry mode.
The temperature range can be changed on heating mode.
The temperature range can be changed on automatic mode.
The remote controller will be the main controller. (Initial setting value)
The remote controller will be the sub controller.
The clock function can be used. (Initial setting value)
The clock function can not be used.
Weekly timer can be used. (Initial setting value)
Auto off timer can be used.
Simple timer can be used.
Timer mode can not be used.
The set contact numbers are not displayed in case of error. (Initial setting value)
The set contact numbers are displayed in case of error.
The temperature unit ℃ is used. (Initial setting value)
The temperature unit °F is used.
Room air temperature is displayed. (Initial setting value)
Room air temperature is not displayed.
One of "Automatic cooling" and "Automatic heating" is displayed under the automatic mode is running. (Initial setting value)
Only "Automatic" is displayed under the automatic mode.

9 SYSTEM CONTROL

9-1. VARIETY OF SYSTEM CONTROL FUNCTIONS

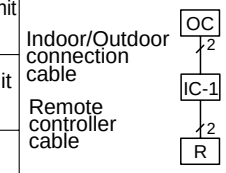
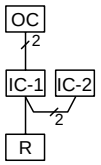
System Name	System Diagram	Features	Parts Required in Addition to Standard System Components (Indoor/Outdoor Units, Remote Controller)
A.Remote controller operation (Standard)		• There are two types of remote controllers: wired type and wireless type. • Simultaneous twin indoor units are started or stopped simultaneously.	———
B. Remote controller operation Use of two controllers enables operation of the air conditioner both from a distance and nearby.	 * One of the wired remote controllers must be set as a sub remote controller.	• Up to two remote controllers can be connected to one group. • Simultaneous twin units are counted as each unit. • Operation control by the latest command (last entered priority) • Wired and wireless remote controllers can be combined as a pair.	Wired remote controller (additional) (PAR-21MAA)
C.Group control operation Use of one remote controller to control multiple air conditioners with the same settings simultaneously.		• One group can consist of up to 16 indoor units, and they can be started sequentially by connecting the remote controller to them and assigning an address to each inter face. • Simultaneous twin units are counted as one unit. • All the units belonging to the same group are operated in the same mode, but thermostats can be turned ON/OFF individually for each indoor unit. • Up to two remote controllers can be connected.	Inter face MAC-397IF-E
D.Remote/local combined control operation Allows start/stop of the air conditioner from a distance, and prohibits/permits start/stop from remote controllers.		• All the air conditioners can be turned ON/OFF collectively from a distance. • Operation can be switched between the remote operating panel and local controller. • Operations (e.g., temperature adjustment, airflow, airflow direction) except for start/stop operations can be performed even if the remote controller is being operated. • In the case of simultaneous twin units connect the controller to one indoor unit only. If connected to two indoor units, an error (operation stop) may occur. • Control by an external timer is possible by connecting it.	Remote ON/OFF adapter (PAC-SE55RA-E) Relay box (Part to be provided at your site) Remote operating panel (Part to be provided at your site)
E.Operation by external signal	———	• Use of optional "remote ON/OFF adapter" enables remote control via relay. (Level signal)	Remote ON/OFF adapter (PAC–SE55RA-E)
F.Control and remote display by external signal (extraction of monitor signal) Enables you to display the operation state and control start/stop from a distance.		Extraction of non-voltage contact output • Use of optional "remote operation adapter" and "remote display panel" (Part to be provided at your site) provides non-voltage contact outputs of signals (operation, error) and operation/stop input function.	Remote operation adapter (PAC-SF40RM-E) Remote display panel (Part to be provided at your site)
		Extraction of DC12 V contact output • Use of optional "Multiple remote controller adapter" and "remote display panel" (Part to be provided at your site) provides DC12 V contact outputs of signals (operation, error) and operation/stop input function.	Multiple remote controller adapter (PAC-SA88HA) Remote display panel (Part to be provided at your site)

System Name	System Diagram	Features	Parts Required in Addition to Standard System Components (Indoor/Outdoor Units, Remote Controller)
G. Timer operation [Enables control of start and stop.] * For control by external timer, refer to Remote/ handheld combined control operation".	———	• Weekly timer: In addition to ON/OFF, up to eight temperature patterns can be set for each day of the week. * Only one timer can be selected; the auto off, simple and weekly timers cannot be combined. • Simple timer: Start and stop operations can each be performed once within 72 hours (can be set in 1-hour increments). • Auto off timer: Operation is stopped when the preset time elapses following the start of operation. The time can be set from 30 minutes to 4 hours in 30-minute increments. * Only one timer can be selected; the simple and auto off timers cannot be combined.	MA Remote controller (PAR-21MAA)
H.Interlock operation with peripheral equipment [Enables control of Mitsubishi Lossnay ventilator by remote controller.]		• Connecting a Lossnay ventilator and an indoor unit enables control of interlock/solo ventilation operation and airflow. (Only the microcomputer type Lossnay ventilator can be used.)	
I.Rotation		• When abnormality occurs while operating, it changes into operating the back up unit, and operating is continued. (Unit function Mode No. 20 setting No.3 , Indoor controller board SW-5-4 ON) Main / Sub setting Main : Indoor controller board SW5-3 : OFF Sub : Indoor controller board SW5-3 : ON • Each system operates alternately for 24 hours or 168 hours. (Unit function Mode No. 20 setting No.1: 24 hours/ No.2 : 168 hours, Indoor controller board SW 5-4 ON) Main / Sub setting Main : Indoor controller board SW5-3 : OFF Sub : Indoor controller board SW5-3 : ON	This system can correspond only by the pattern of two refrigerant group by 1 : 1 (indoor and outdoor unit combination) systems.

9-2. ONE REMOTE CONTROLLER (STANDARD) OPERATION

(1) One Wired Remote Controller

(OC: Outdoor unit IC: Indoor unit R: Remote controller (for wireless type: optical receiver adapter)

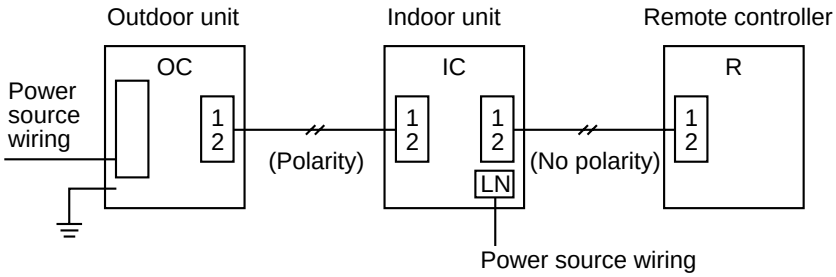
Slim Air Conditioners System		Standard 1:1	Simultaneous Twin
Remote controller connection circuit (Controller cable)	Outdoor unit OC Indoor unit IC Wired remote controller R		

Indoor controller board switch setting	
SW5-3	Indoor unit IC
OFF	IC-1 (Main)
ON	IC-2 (Sub)

(Reference)

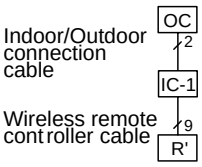
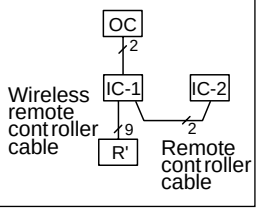
① If simultaneous twin, connect the remote controller to an indoor unit. All functions of the indoor unit can be controlled even if different models (different types) are mixed. Note that there may be some restrictions of the functions.

② Electrical wiring diagram



- Power supply terminal block L, N
- Indoor/outdoor connection cable terminal block 1,2 (Polarity)
- Remote controller cable terminal block 1,2 (No polarity)

(2) Wireless remote controller

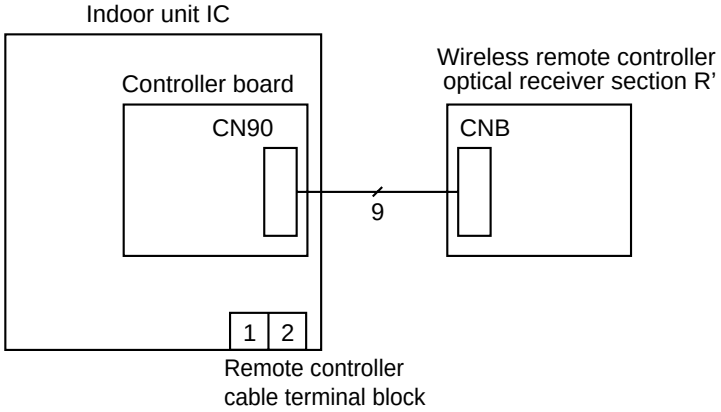
Slim Air Conditioners System		Standard 1:1	Simultaneous Twin
Remote controller optical receiver section connection circuit	Outdoor unit OC Indoor unit IC Wireless remote controller receiver section R'		

Indoor controller board switch setting	
SW5-3	Indoor unit IC
OFF	IC-1 (Main)
ON	IC-2 (Sub)

(Reference)

① If simultaneous twin, connect the remote controller to an indoor unit. All functions of the indoor unit can be controlled even if different models (different types) are mixed. Note that there may be some restrictions of the functions.

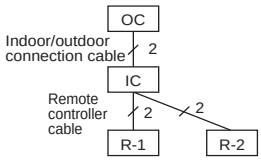
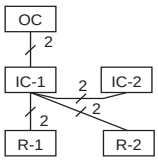
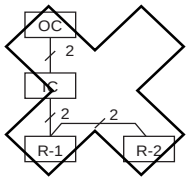
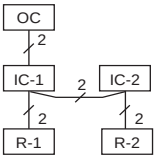
② Electrical wiring diagram



9-3. TWO-REMOTE CONTROLLER OPERATION

(1) Two Wired Remote Controllers

(R: Wired remote controller)

Slim Air Conditioner System		Standard 1:1	Simultaneous Twin
Remote controller connection circuit (Controller cable)	Outdoor unit OC Indoor unit IC Wired remote controller R		
	Outdoor unit OC Indoor unit IC Wired remote controller R		

Indoor controller board switch setting

SW5-3	Indoor unit IC
OFF	IC-1 (Main)
ON	IC-2 (Sub)

[Reference]

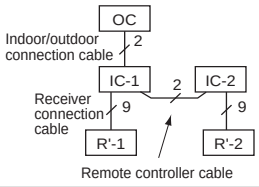
① In the case of free component multi type systems consisting of simultaneous twin units, connect the remote controllers to each indoor unit. All the functions of the connected indoor units can be controlled even if the system consists of different models. However, some function may be restricted.

② In the case of free component multi type systems consisting of simultaneous twin units, the indoor units should be connected by crossover wiring.

③ Set one of the remote controllers as the main controller (factory setting) and the other as the sub controller using the remote controller's function selection.

(2) Two Wireless Remote Controllers

(R': Wireless remote controller receiver)

Slim Air Conditioner System		Standard 1:1	Simultaneous Twin
Remote controller receiver connection circuit	Outdoor unit OC Indoor unit IC Wireless remote controller receiver section R'	—	

Indoor controller board switch setting

SW5-3	Indoor unit IC
OFF	IC-1 (Main)
ON	IC-2 (Sub)

* Numbers given in ( ) apply when power is supplied to the indoor and outdoor units separately.

[Reference]

① In the case of free component multi type systems consisting of simultaneous twin units, connect two wireless remote controller receivers (one each) to any two of the indoor units. All the functions of the connected indoor units can be controlled even if the system consists of different models. However, some functions may be restricted.

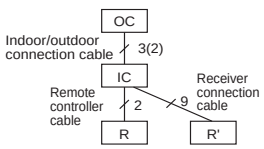
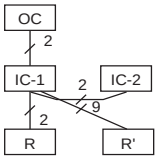
② In the case of free component multi type systems consisting of simultaneous twin units, the indoor units should be connected by crossover wiring.

③ In the case of "standard 1:1" connection, it is not possible to connect two remote controller receivers to the indoor units. However, with systems consisting of simultaneous twin units, it is possible to connect a remote controller receiver to two indoor units. In this case, all the pair numbers will be "0" (factory setting, no change necessary), and all the units will be turned ON/OFF simultaneously.

④ When using two or more wireless remote controllers, the display contents on the remote controllers may differ from the actual settings, since the operation made last by any of the remote controllers will be effective.

(3) One Wired and One Wireless Remote Controller

(R: Wired remote controller, R': Wireless remote controller receiver)

Slim Air Conditioner System		Standard 1:1	Simultaneous Twin
Remote controller receiver connection circuit	Outdoor unit OC Indoor unit IC •Wired remote controller R •Receiver R'		

Indoor controller board switch setting

SW5-3	Indoor unit IC
OFF	IC-1 (Main)
ON	IC-2 (Sub)

[Reference]

① In the case of free component multi type systems consisting of simultaneous twin units, connect both the wired remote controller and wireless remote controller receiver to any one of the indoor units. All the functions of the connected indoor units can be controlled even if the system consists of different models. However, some functions may be restricted.

② In the case of free component multi type systems consisting of simultaneous twin units, the indoor units should be connected by crossover wiring.

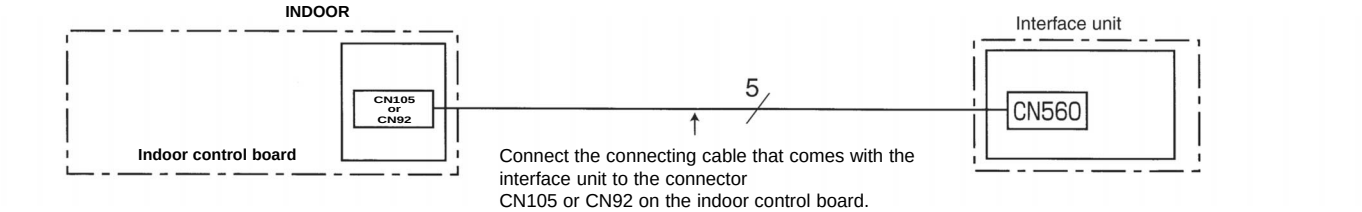
③ When using two or more wireless remote controllers, the display contents on the remote controllers may differ from the actual settings, since the operation made last by any of the wireless remote controllers will be effective.

9-4. GROUP CONTROL OPERATION
(COLLECTIVE OPERATION AND CONTROL OF MULTIPLE REFRIGERANT SYSTEMS (2 to 16))

- Group control can be operated by using MAC-397IF-E.
- The setting of wired remote controller is subjected to variation according to the function of the indoor unit. (for mode operation, setting temperature, fan step, air direction)
- The display of remote controller and operating the indoor unit might be different.
- Neither the test run nor the function setting can be done by MA remote controller connected with MAC-397IF-E.

1.Connecting the MA& CONTACT TERMINAL Interface to the Indoor Unit

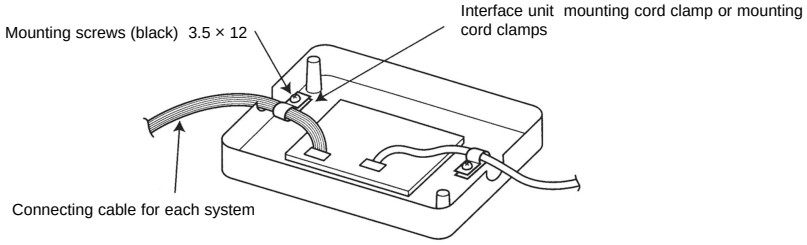
- Connect the interface unit and the indoor control board using the connecting cable that came with the interface.
- Extending or shortening the connecting cable that comes out of the interface may cause it to malfunction. Also, keep the connecting cable as far as possible away from the electrical wires and ground wire. Do not bundle them together.


INDOOR
Interface unit
CN105 or CN92
5
CN560
Indoor control board
Connect the connecting cable that comes with the interface unit to the connector CN105 or CN92 on the indoor control board.

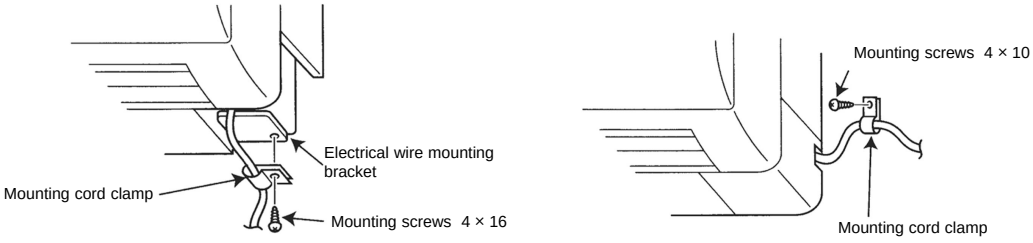
2.Connecting the remote control interface with each system

(For details on each system, see the relevant instruction manual.)

- Replace the interface unit mounting cord clamp with a supplied mounting cord clamp based on the thickness of the connecting cable used for each system.


Mounting screws (black) 3.5 × 12
Interface unit mounting cord clamp or mounting cord clamps
Connecting cable for each system

- The cables connected to the Indoor unit should be mounted on or near the Indoor unit. If the connecting cable is not securely mounted, the connector may detach, break, or malfunction.

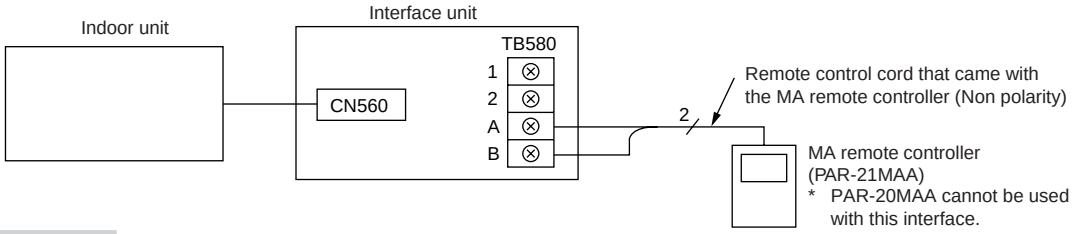


- Set the interface dip switch (SW500–502) settings before turning on the power.
- If the interface dip switch (SW500–502) settings are not set correctly, the system will not function properly.

Use as a Wired Remote Control (Using the MA Remote Controller)

Note:

1. **Be sure the Auto Heating/Cooling Display Setting on the MA remote controller is set to OFF before use.**
   - **For information on how to set the Auto/Heating Cooling Display Setting, see the MA remote controller instruction manual.**
   - **The actual operating status of the unit may differ from what is shown on the remote controller display**
2. **A test run cannot be initiated using the test run switch on the MA remote controller.**
3. **The horizontal vanes on the unit cannot be operated using the louver switch.**
4. **The range of room temperature indication is between 10℃ and 38℃.**



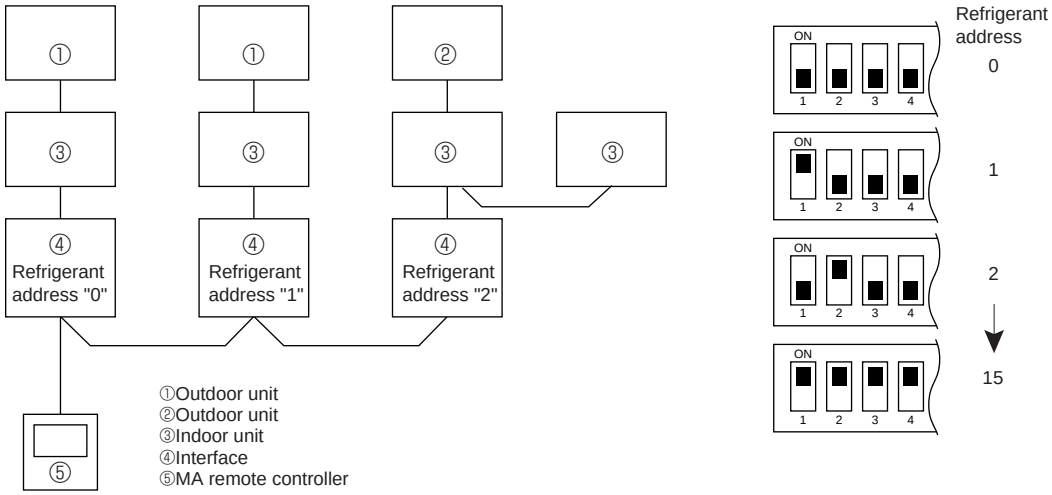
Dip switch settings

SW500 does not have to be set.

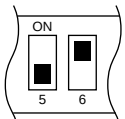
SW501:

SW501- No. 1-4: Refrigerant address

Set this switch when multiple indoor units (and remote control interfaces) are connected to a single MA remote controller.
Always start the refrigerant address at "0".
Even when connecting multiple outdoor units, set a different refrigerant address for each indoor unit.



SW501- No. 5–6

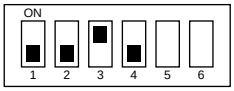
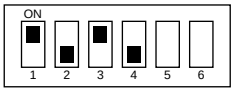
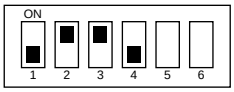
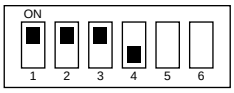
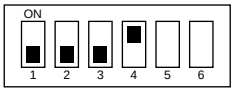
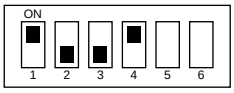
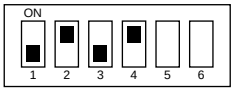
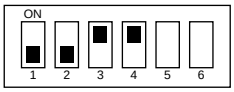
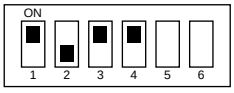
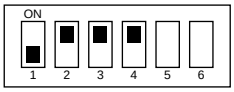
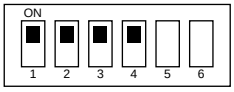


No. 5 should normally be set to OFF.
Under the following conditions, No.6 should normally be set to ON.

→ When the model of Mr. SLIM exists in the same group, it sets it to turning ON.

→ Set them to ON only when using the room temperature sensor installed in the MA remote controller.
* This can be switched when an accurate room temperature cannot be detected by the air conditioner unit.
PE-EAK series do not have a room temperature sensor on their MA remote controllers.

SW501: Settings to accommodate MA remote controller and settings to accommodate outdoor units

SW No.	Functions	OFF	ON	Comments
No. 1 No. 2 No. 3 No. 4	Refrigerant address 0			Only specify these settings when connecting an MA remote controller.
	Refrigerant address 1			
	Refrigerant address 2			
	Refrigerant address 3			
	 Refrigerant address 4			
	 Refrigerant address 5			
	 Refrigerant address 6			
	 Refrigerant address 7			
	 Refrigerant address 8			
	 Refrigerant address 9			
	 Refrigerant address 10			
	Refrigerant address 11			
	 Refrigerant address 12			
	 Refrigerant address 13			
	 Refrigerant address 14			
	 Refrigerant address 15			
SW No.	Functions	OFF	ON	Comments
No. 5	Room temperature detector	Indoor unit	Remote control	This should normally be set to OFF.
No. 6	The model of Mr. SLIM exists in the same group.	Not mixed	Mixed	This should normally be set to ON.

SW502 : Air Conditioner Function Settings

<table>
<tr><th>SW No.</th><th>Functions</th><th>OFF</th><th>ON</th><th>Comments</th></tr>
<tr><td>No. 1</td><td>Cooling only type/ Heat pump type</td><td>Heat pump type</td><td>Cooling only type</td><td>Set the mode in accordance with the operation manual for the indoor unit.</td></tr>
<tr><td>No. 2</td><td rowspan="2">Auto mode</td><td>Not available
(setting No.3 disabled)</td><td>Available
(setting No.3 enabled)</td><td>Heat pump type : Set to ON.
Cooling only type : Set to OFF.</td></tr>
<tr><td>No. 3</td><td>Available
(unit)</td><td>Available
(remote controller)</td><td>Set to OFF.</td></tr>
<tr><td>No. 4</td><td>Fan speed</td><td>4 speeds</td><td>3 speeds (2-speed model set ON)</td><td>When operating a 2-speed model with the 3-speed setting (ON), the MA remote controller display will indicate 3 fan speeds.
The table below shows the displays and the actual outputs at that time.
<table>
<tr><th>Display</th><th>Meaning</th><th>Indoor unit output</th></tr>
<tr><td></td><td>Low speed</td><td>Low speed</td></tr>
<tr><td></td><td>Medium speed</td><td>High speed</td></tr>
<tr><td></td><td>High speed</td><td>High speed</td></tr>
</table></td></tr>
<tr><td>No. 5</td><td>Vane</td><td>Available</td><td>Not available</td><td>The Vane function of either of indoor unit :
When the function is provided, it is Available (OFF).
When the function is not provided, it is Not available (ON).</td></tr>
<tr><td>No. 6</td><td>Swing</td><td>Available</td><td>Not available</td><td>The Swing function of either of indoor unit :
When the function is provided, it is Available (OFF).
When the function is not provided, it is Not available (ON).</td></tr>
<tr><td>No. 7</td><td>Not in use</td><td>–</td><td>–</td><td>Permanently set to OFF.</td></tr>
<tr><td>No. 8</td><td>Fan mode</td><td>Not available</td><td>Available</td><td>Set to ON.</td></tr>
</table>

* Fan speed 2 step model : An actual fan speed is 2 step though the display of remote controller becomes 4 step or 3 step.

3. Test Run (Check Operations)

Interface status monitor

You can check the status of the interface by the LED lamp on the interface unit board.

LED lamp no.	Lamp off	Lamp on	Blinking
LED521	DC 12 V is not being supplied from the air conditioner.	DC 12 V is being supplied from the air conditioner.	–
LED522	Device is not communicating properly with the air conditioner.	–	Blinking at approx. 1 second intervals: Device is communicating normally with the air conditioner.
LED523	Device is not communicating properly with the MA remote controller.	–	Blinking at approx. 8 second intervals: Device is communicating normally with the MA remote controller.

* Use the table above to check the device operations.

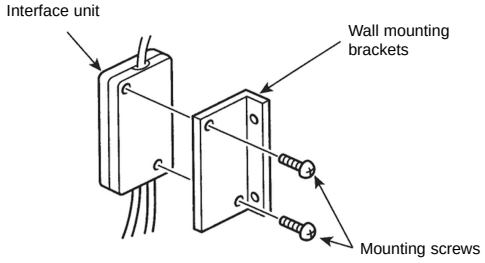
4. Mounting the Remote Control Interface Unit

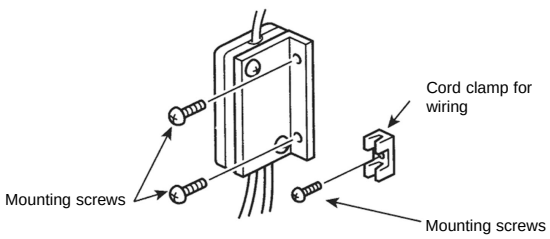
The Interface unit should be placed in a location where the connecting cable from the interface can reach an indoor unit.
The device will not function properly if the connecting cable is extended so the connecting cable should not be extended.
Mount the interface unit securely to a pillar or wall using 2 or more screws.

■ When Using Wall Mounting Brackets

1 Attach the wall mounting brackets to the interface unit using 2 mounting screws.

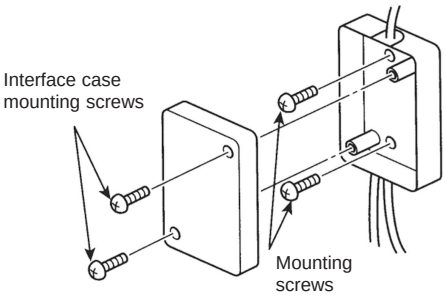
2 Mount the unit to a pillar or wall using 2 mounting screws.



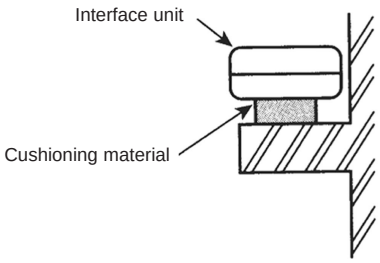


■ When Mounting Directly to a Wall

Mount the interface unit case to the wall using the mounting screws.



* When mounting the interface unit using a cushioning material , be sure to mount it in a location where it will not fall.



When mounting the interface unit inside a ceiling or wall, install an access door to facilitate maintenance.

When the interface unit is mounted above an indoor unit, it should be positioned 40 mm or more away from the unit to ensure that ceiling grills can be removed.

40 mm or more

Attach the interface unit connecting cable here. Store extra connecting cable in the ductwork space behind the indoor unit.

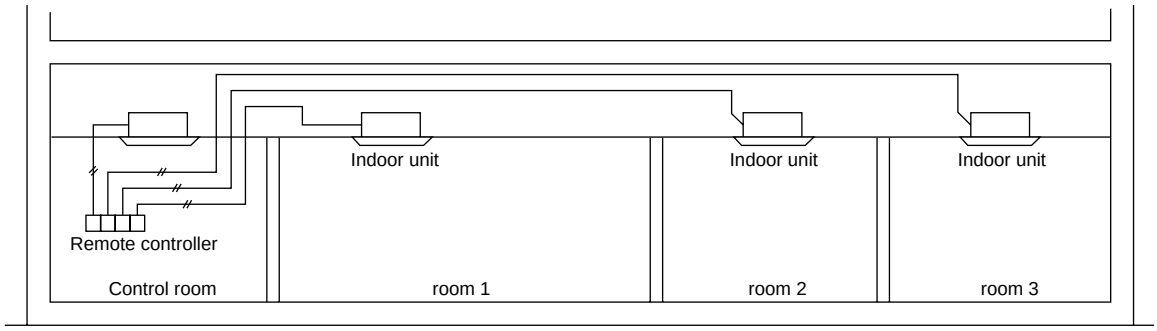
* If there is any slack in the connecting cable, use a fastener to keep it in place.

9-5. POWER OUTAGE AUTOMATIC RECOVERY OPERATION

- Whenever a power outage or switching of the power supply causes the power supply of an operating air conditioner to go from OFF to ON, this function will automatically restore the operation of the air conditioner to its previous operating mode.
  ※ If the power is turned from OFF to ON when the air conditioner is not in operation, the air conditioner will not automatically be turned on. However, the timer operation will be cancelled if the air conditioner is in timer operation (including when the unit is waiting for its start time). Setting for timer operation must be performed once again.
- If there is a momentary power outage of less than one second while the air conditioner is in operation, there may not be a clear determination of whether or not there was a power failure. When it has been determined that there has been a power failure, recovery will take approximately four minutes after the power is restored. Please wait. (Once "PLEASE WAIT" has appeared on the display, a protection system will operate to prevent the unit from restarting for three minutes.)
  When it has been determined that there has been no power failure, operation will continue as is.
- Settings can be made by function selections from the remote controller.
- When there is group control, selection of all refrigerants is required.

9-6. INDIVIDUAL CONTROL OPERATION FROM A SEPARATE ROOM

- By simply centralizing the remote controllers installed in each room in a separate control room, individual control or centralized monitoring of the air conditioners in each room can be attained.
- Air conditioner control can be performed up to a total of 500 meters away by connecting the indoor units and remote controllers with 0.3 to 1.25 mm^2 2-core cable.



- If a remote controller is installed in a room and control room, refer to the section on operating with two remote controllers.

9-7. COMBINED REMOTE/LOCAL CONTROL

- Operation/remote controller prohibit/ stop can be controlled from a remote location by routing the remote stop/start adapter (PAC-SE55RA-E sold separately) through the relay box installed on site. When this remote control is cancelled, the local remote controller can be used for operating and stopping the air conditioner.

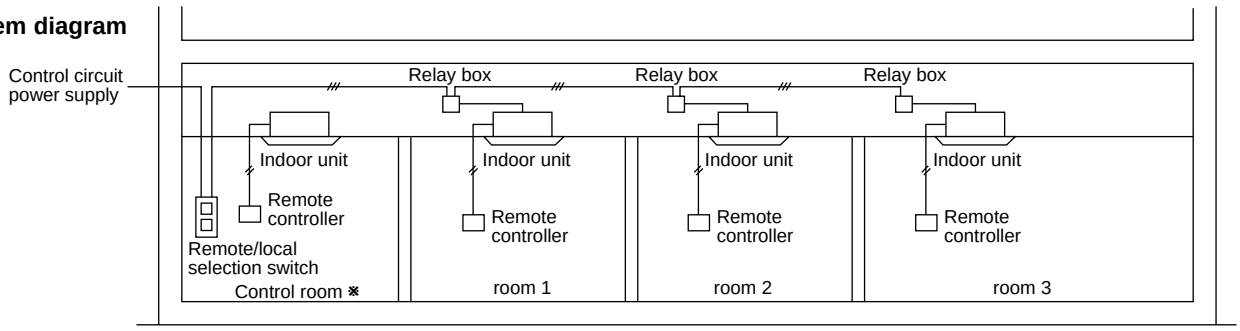
1. Basic system wiring

- Use the remote start/stop adapter (PAC-SE55RA-E) and connect the "Start/Stop Circuit From Remote Location" that comes from the relay box and remote/local selection switch and connect it to the CN32 connector on the printed circuit board for the indoor unit

<Points of precaution>

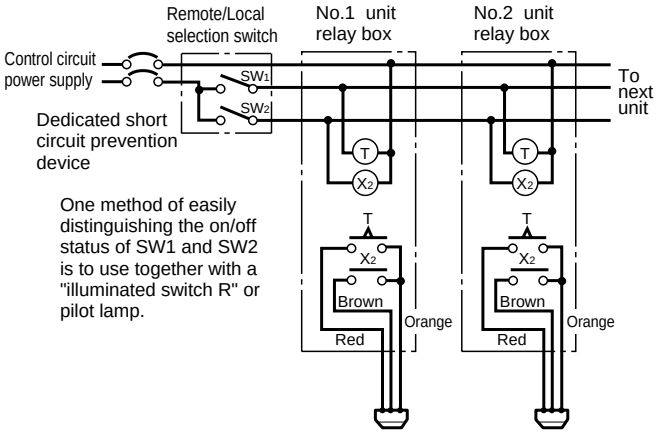
① Match the rated power supply voltage of the remote/local selection switch and relay (X2) with the power supply for the controller.
② When performing group control of multiple outdoor unit using a timer, be sure to arrange the timer so that all units do not start at the same time. If this is not performed, all of the units will start at one time creating an over current that will cause the circuit breaker to operate.
③ An on-delay system is one that includes specifications for operating a limited time when an on signal is received and has a temporary off timer for recovery operations.
④ Use a connecting relay when the wiring length exceeds 10 meters, such as when performing remote wiring. If this is not provided, abnormal operation will occur.

(1) System diagram



※ The AC for the control room is usually disconnected from the remote/local control system.

(2) Basic wiring diagram



Note: When using group address, connect to refrigerant address "0" on the inside.

(3) Part specifications

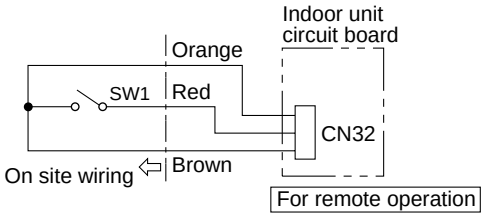
① Remote/Local selection switch	② Adapter for remote start/stop	③ Relay box
(Example) Single polarity single-throw switch (125V rating)	Model PAC-SE55RA-E (Sold separately)	Ⓣ Timer (On delay system) Ⓧ Relay

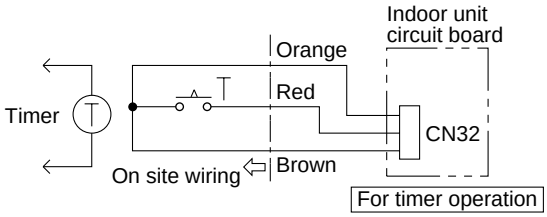
Remote control	SW1	ON		OFF	
Remote/Local selection switch	SW2	ON	OFF	ON	OFF
Description of functions		• Starting/stopping with remote controller disabled. • AC is in operation. • Starting/stopping by remote operation enabled.	• Starting/stopping with remote controller disabled. • Starting/stopping by remote operation enabled.	• Starting/stopping with remote controller disabled. • AC is in operation. • Starting/stopping by remote operation enabled.	• Starting/stopping with remote controller disabled. • Starting/stopping by remote operation enabled.

2. Examples of system applications

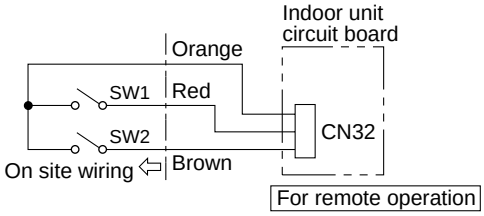
In any of the following examples, there is a five to six second delay from the time the operating command is issued until the operation begins.

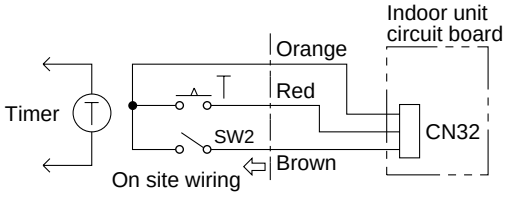
① This is when starting and stopping is performed by remote operation or external timer and when starting and stopping by the remote controller is to be prohibited.



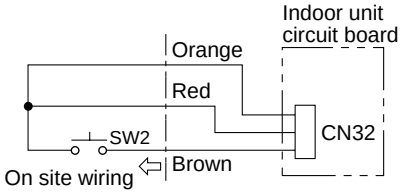


② This is when starting and stopping is performed by remote operation or external timer and when starting and stopping by the remote controller is to be separated.



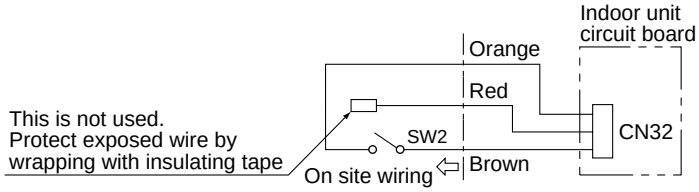


③ This is when starting and stopping is performed by remote operation and then allowing starting or stopping by remote control at any time.



Use momentary switch for SW2. (Manual operation/automatic recover switch on time is more than one second.)
Press SW2 (on time is more than one second) and operation starts. After this has been done, stopping or restarting can be down by remote controller.

④ This is when permitting or prohibiting operation by remote controller is performed by external circuit.

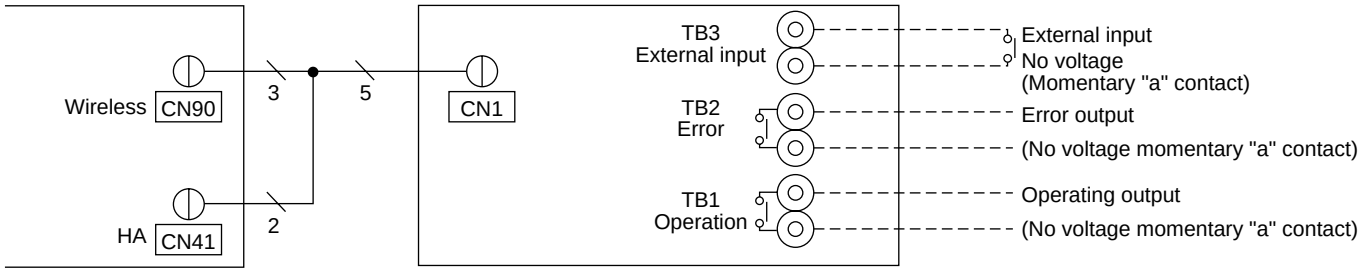


If SW2 is on, operation by remote controller cannot be performed.
If SW2 is off, operation by remote controller is permitted.

9-8. OBTAINING REMOTE DISPLAY

Use the remote operation adapter (PAC-SF40RM-E) to provide operation/error non-voltage contact output and on/off input function.

(1) Wiring method



⚠Caution **TB3 is a dedicated terminal for contact point input. Never input voltage. It will damage the indoor control circuit board.**

<Connections on the indoor unit side>

① When using external output function
Insert the 9-prong connector (3-core) of the attached cable to CN90 on the indoor control circuit board.

② When using the external input function
Insert the 4-prong connector (2-core) of the attached cable to CN41 on the indoor control circuit board.

※ The connector is direction-sensitive. Use care not to make an error when inserting.
Never force the connectors. This will result in damage.

(2) Locally procured parts

Item	Name	Model and specifications
External output function	External output signal wire	Use sheathed vinyl coated cord or cable. Wire type: CV, CVS or equivalent. Wire size: Stranded wire 0.5mm² to 1.25mm² Single straged: ϕ0.65mm to 1.25mm
	Display lamp, etc.	No voltage "a" contact AC200V (DC30V), 1A or less
External input function	External input signal wire	Use sheathed vinyl coated cord or cable. Wire type: CV, CVS or equivalent. Wire size: Stranded wire 0.5mm² to 1.25mm² Single straged: ϕ0.65mm to 1.2mm
	Switch	No voltage "a" contact (Start and stop operation is switched by inputting a pulse of 200ms or more)

9-9. TIMER OPERATION

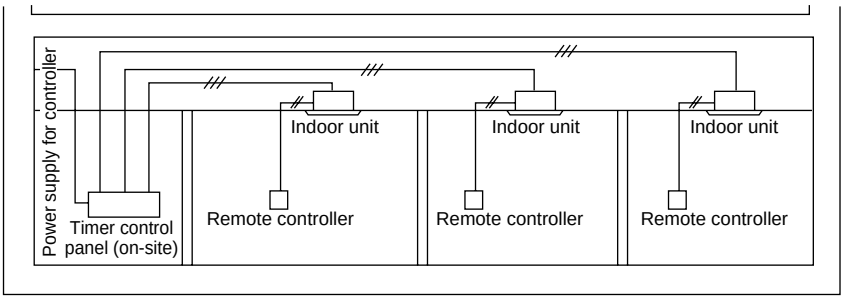
- Timer operation can be performed by setting the wired or wireless remote controller timer. Start and stop times can be set in 10-minute increments within a 24-hour period.
- When used in combination with the central control remote controller of the M-NET control system for the outdoor unit, one program timer can be used for individual timer settings for each group of the central control system. (Each timer setting can be stored in data memory so timer settings for up to 50 groups can be set individually.)

※ Please refer to the MELANS catalog or technical information for details about the central control remote controller.

1.Operating with on-site timer

(1) Summary of system

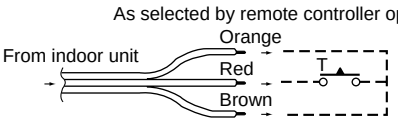
If the "Remote ON/OFF adapter" (PAC-SE55RA-E) (sold separately) is used, the on-site timer can be operated to turn each unit on and off.



(2) Basic pattern for timer control

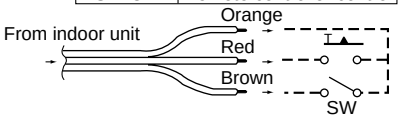
Use a no-voltage contact point output timer (one that has separate circuits for the load side and timer power supply).

a) Timer-independent control



b) Combined control by timer and remote controller

SW ON	Timer control
SW OFF	Remote controller control



(3) Basic system

Refer to 9-7. COMBINED REMOTE/LOCAL CONTROL.

9-10. LINKED OPERATION WITH PERIPHERAL AIR CONDITIONERS EQUIPMENT

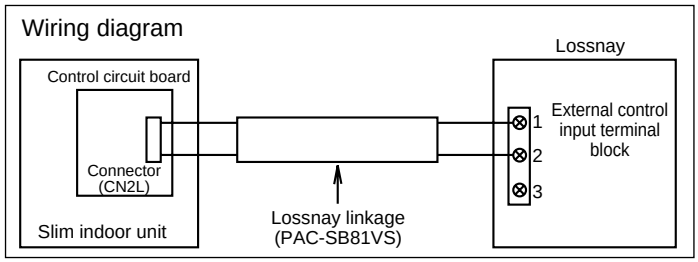
■ Lossnay operation

● Linked operation with a Lossnay unit can be obtained by connecting Lossnay linkage cable (Model PAC-SB81VS - sold separately) to the CN2L (Remote kit) on the circuit board of the indoor unit. This function must be selected from the remote controller.

① **Summary of wiring**

● Connect the Lossnay linkage cable (Model PAC-SB81VS) connector to CN2L on the indoor unit on the circuit board of the indoor unit.

● Connect the lead wire of the Lossnay linkage cable to the Lossnay external control input terminal blocks (1) and (2).
(At this time, the input terminal blocks (1) and (2) have no polarity.)



② **Precautions when wiring**

● The Lossnay linkage cable can be extended up to a maximum of 500 meters.
When extending the Lossnay linkage cable, be sure to connect securely and take proper steps to ensure insulation.
(Extension cable specifications: Sheathed vinyl cord or cable 0.5 to 0.75mm^2)

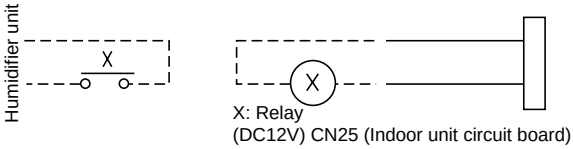
● Lossnay linked cable

● Arrange wiring so that there can be no contact between the Lossnay linkage cable and the power supply cord. Contact may cause malfunctioning. (Separate by 5cm or more.)

9-11. OBTAINING HUMIDIFIER SIGNAL

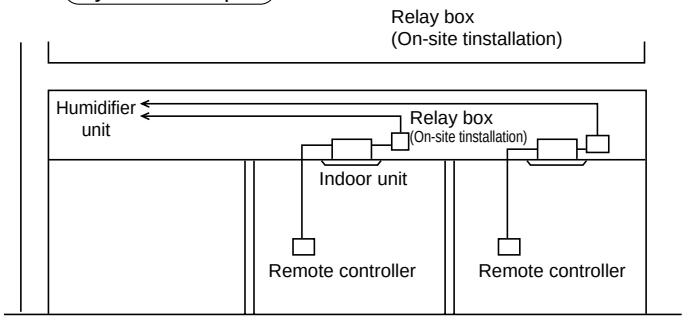
● The humidifier signal that is linked to the AC heating operation (indoor unit ventilator) can be obtained by connecting the adapter for the humidifier signal to connector CN25 on the printed circuit for the indoor unit and wiring it to the humidifier unit via the on-site relay box. There is no output when the thermostat is off, during heating preparation and during defrosting.

Basic wiring



※ Please consult your nearest Mitsubishi Electric representative for information about obtaining the adapter for humidifier signal.

System example



9-12. EXTERNAL MOUNTING OF TEMPERATURE SENSOR

● Temperature control from an alternative external location can be performed by connecting the temperature sensor (Model PAC-SE41TS-E - sold separately) to the CN20 connector on the circuit board for the indoor unit.

● The wired remote controller also has an internal temperature sensor. Function selection from the remote controller is required.
Refer to “FUNCTION SETTING” for information of installation manual about selecting functions with the remote controller.

9-13. MULTIPLE REMOTE CONTROL DISPLAY

You can control several units with a multiple remote control display, by wiring an optional multiple remote controller adapter (PAC-SA88HA-E) with relays and lamps on the market.

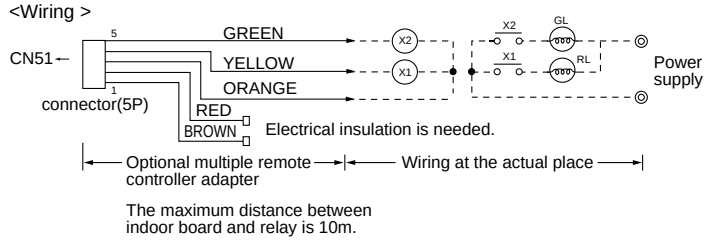
Refer to 7-7-2. Indoor controller board.

How to wire

(1) Connect the multiple remote controller adapter to the connector CN51 on the indoor controller board.

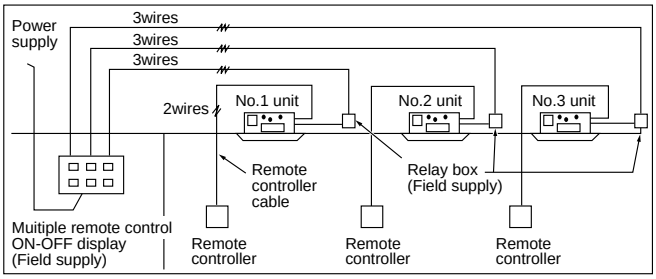
(2) Wire three of the five wires from the multiple remote controller adapter as shown in the figure below.

<Wiring >



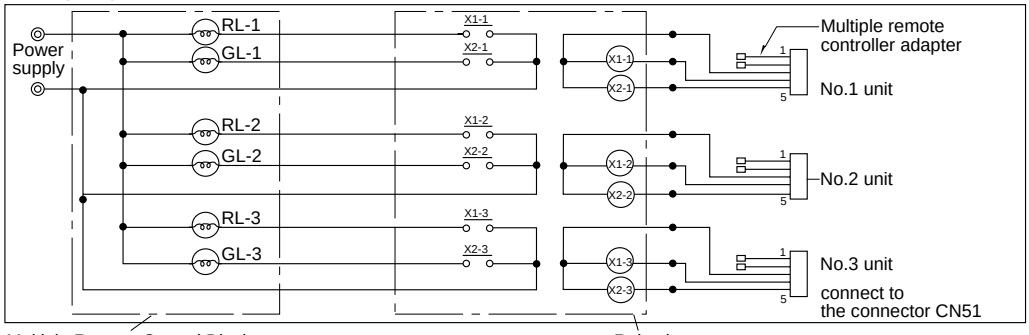
[Notes on Signs]
X1:Relay (for operation lamp)
X2:Relay (for check lamp)
RL:Operation Lamp
GL:Check Lamp

<System>



(Operation check)

<Wiring diagram>



9-14. INTERLOCKING OPERATION METHOD WITH DUCT FAN (Booster fan)

●Whenever the indoor unit is operating, the duct fan operates.

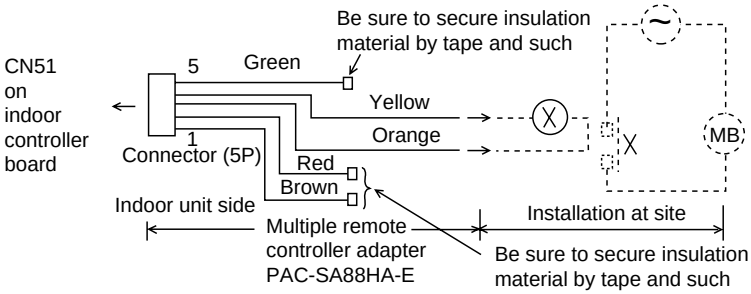
(1)Connect the optional multiple remote controller adapter(PAC-SA88HA-E)to the connector CN51 on the indoor controller board.

(2)Drive the relay after connecting the 12V DC relay between the Yellow and Orange connector lines.

Use a relay under 1W.

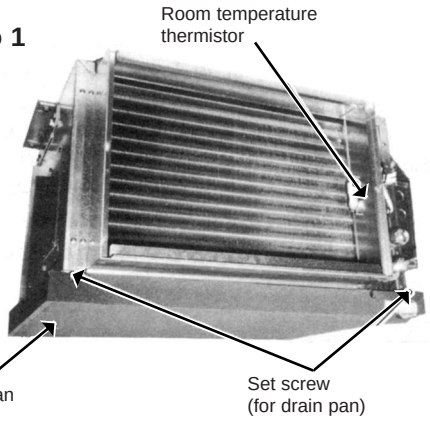
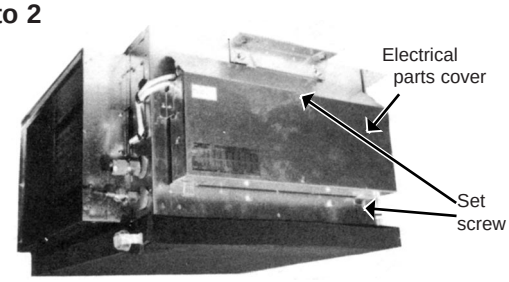
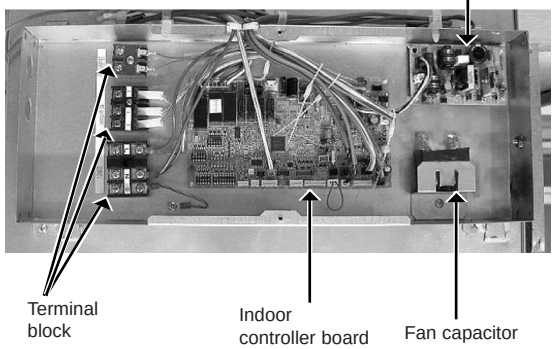
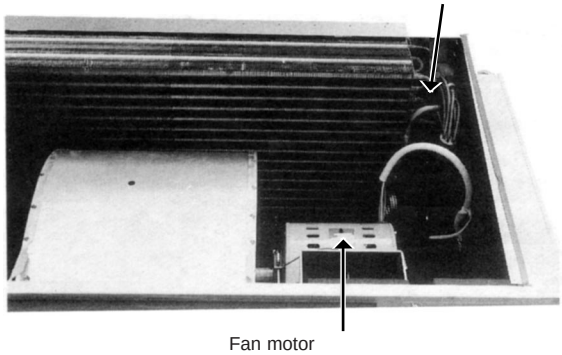
MB: Electromagnetic switch power relay for duct fan.

X: Auxiliary relay (12V DC LY-1F)



10 DISASSEMBLY PROCEDURE

PE-3EAK.TH PE-4EAK.TH PE-5EAK.TH PE-6EAK.TH
PE-3EAK.TH-U PE-4EAK.TH-U PE-5EAK.TH-U PE-6EAK.TH-U

OPERATING PROCEDURE	PHOTOS&ILLUSTRATIONS
1. Removing the drain pan (1) Unscrew each set screw on the right and left, and remove the drain pan pushing it toward the back. (See Photo 1)	**Photo 1** 
2. Removing the electrical parts (1) Remove the electrical parts cover. (set screw × 2) and the parts as below (See Photo 2) ● Indoor controller board ● Power board ● Fan capacitor ● Terminal block (See Photo 3)	**Photo 2**  **Photo 3** 
3. Removing the indoor coil thermistor (1) Remove the drain pan. (See Photo 1) (2) Remove the electrical parts cover. (See Photo 2) (3) Remove the set wire of the indoor coil thermistor. (See Photo 4)	**Photo 4** 

OPERATING PROCEDURE

4. Removing the fan

Note : Perform the following with the indoor unit lowered down to the floor.

(1) Remove the drain pan. (See Photo 1)

(2) Disconnect the connector for the fan motor. (See Photo 3)

(3) Take out the fan after removing the 7 set screws of the fan plate. (See Photo 5 or 6.)

(4) Unscrew four set screws of the bell mouth and remove the bell mouth. (See Photo 7.)

(5) Loosen the set screw of the fan to pull out the sirocco fan. (See Photo 7.)

(6) Unscrew the four set screws of the motor fitting, and remove the fan motor. (See Photo 8.)

PHOTOS

Photo 5

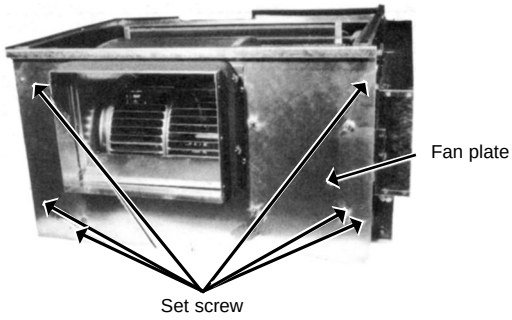


Photo 6

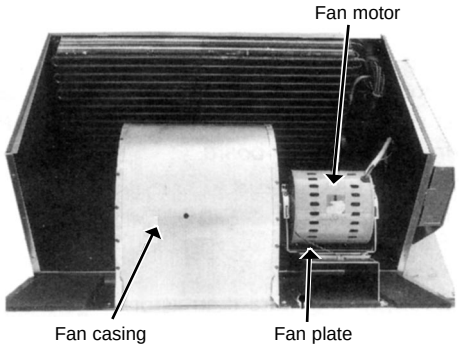


Photo 7

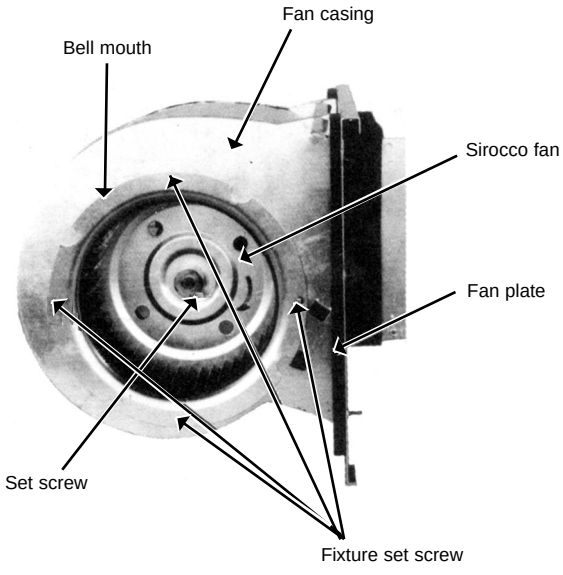
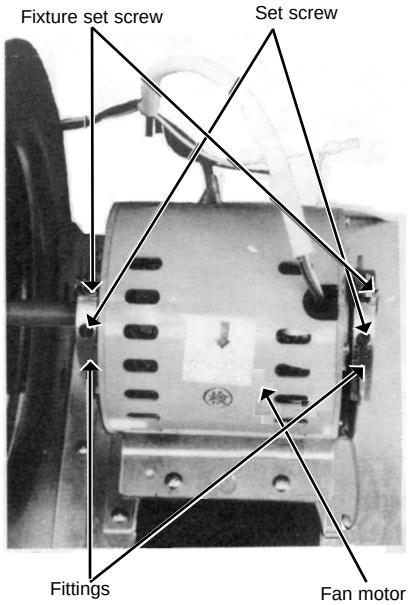
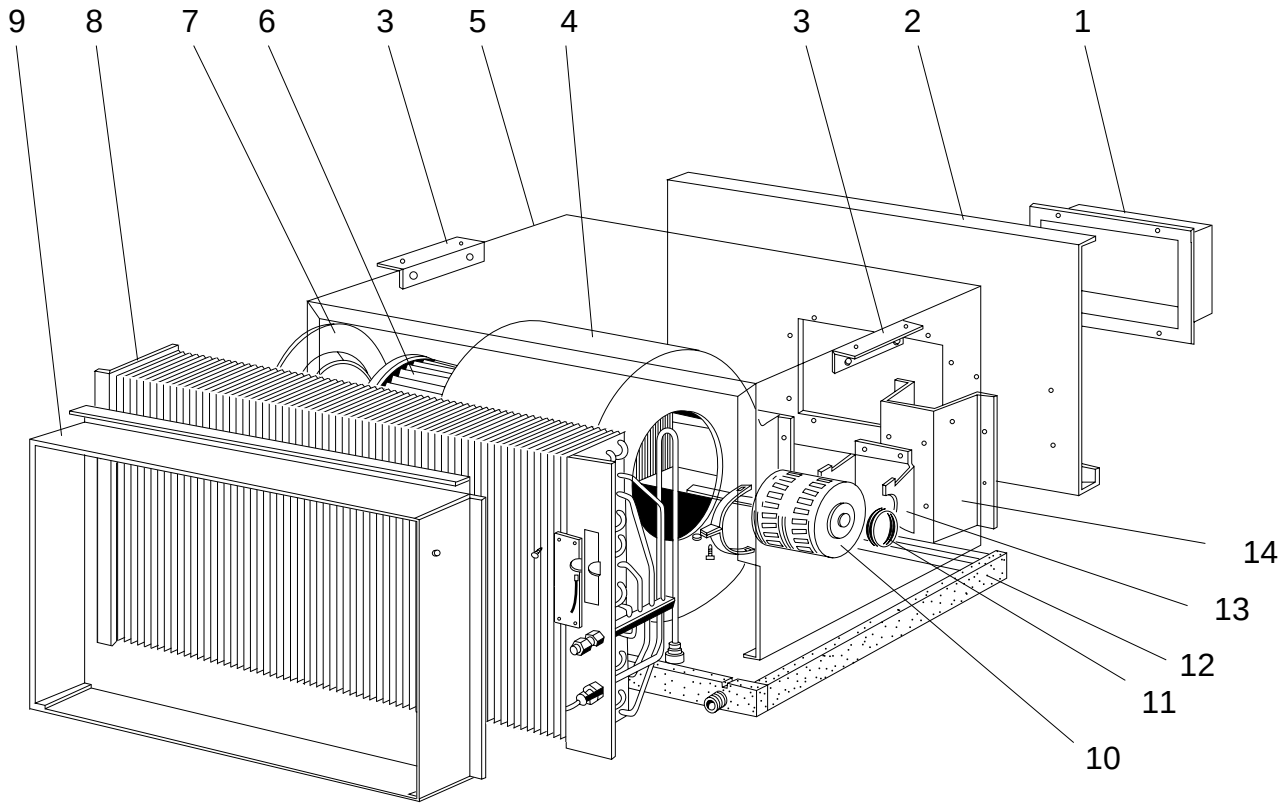


Photo 8



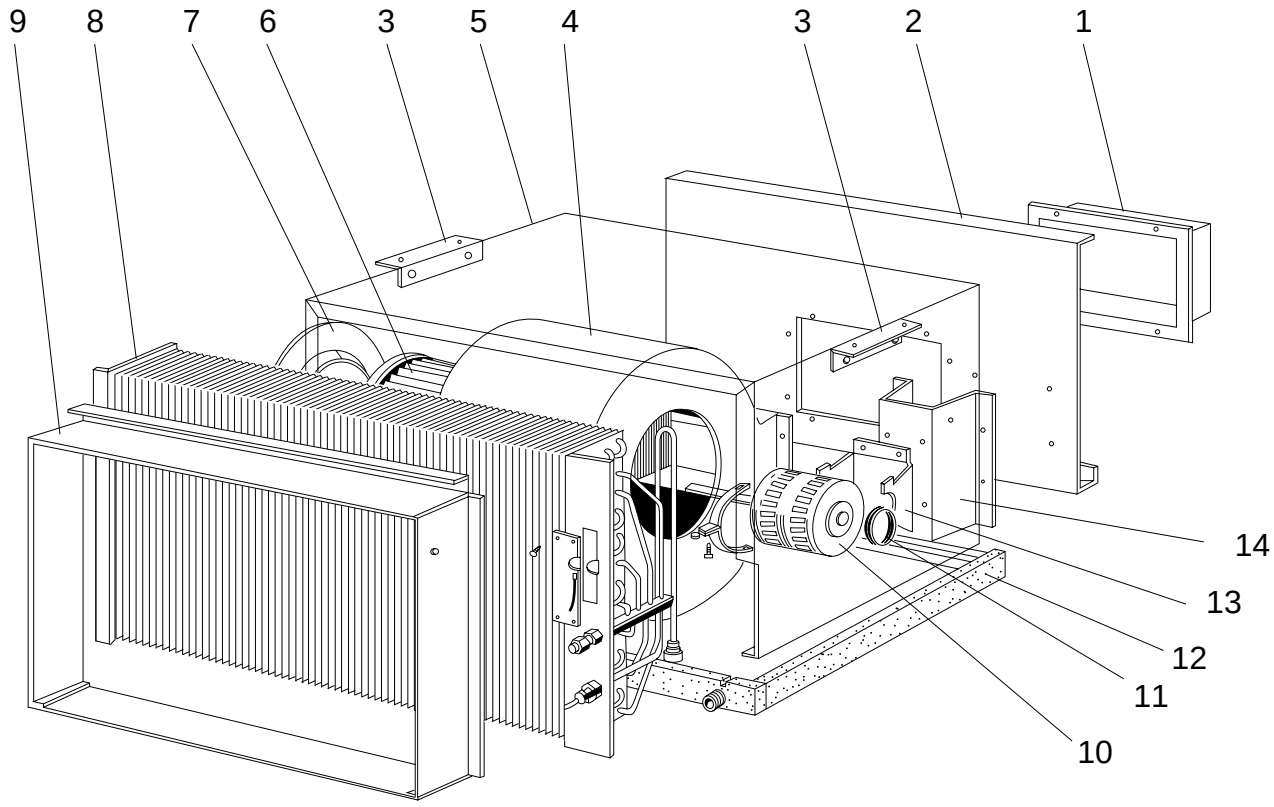
11 RoHS PARTS LIST

STRUCTURAL PARTS
PE-3EAK.TH PE-3EAK.TH-U



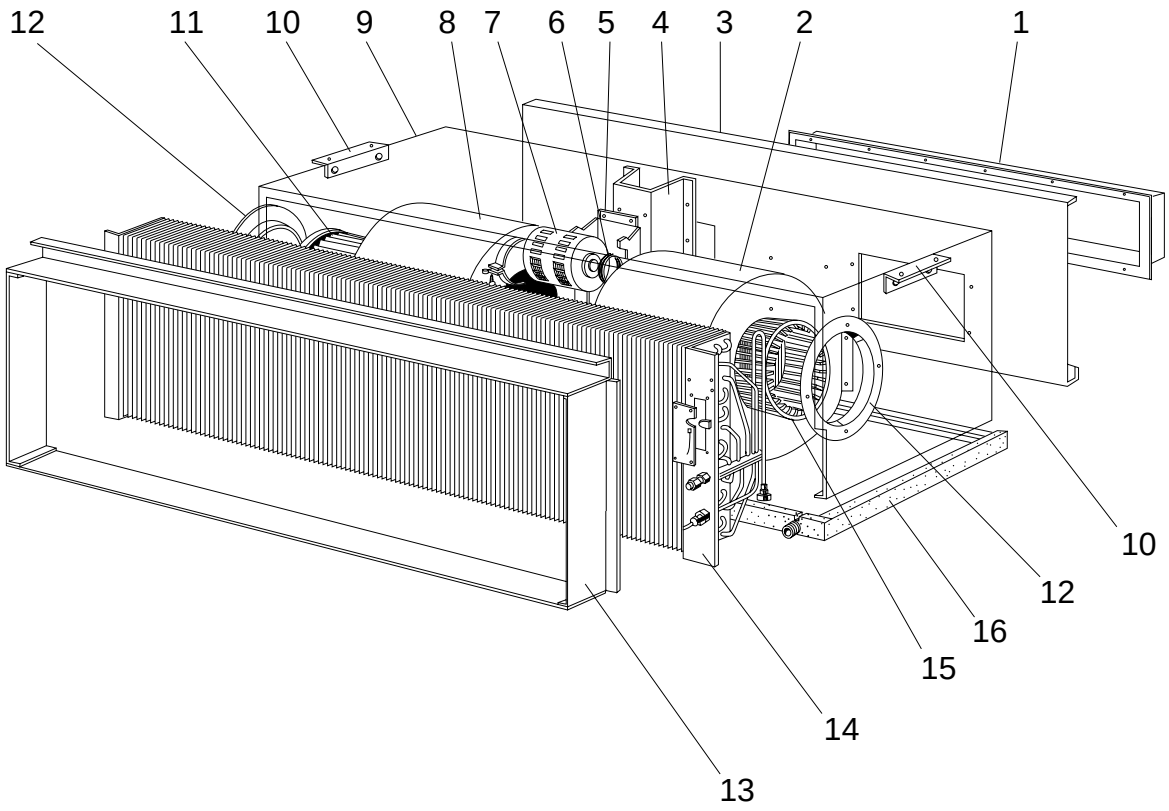
No.	RoHS	Part No.	Part Name	Specification	Q'ty/set	Remarks (Drawing No.)	Wiring Diagram symbol	Recommended Q'ty	Price	
					PE-3EAK.TH(-U)				Unit	Amount
1	G	—	AIR OUTLET DUCT FLANGE		1	(BA00H896G08)				
2	G	—	FAN PLATE		1	(BA02G745G10)				
3	G	E17 018 808	LEG		2					
4	G	—	CASING		1	(R300B098F04)				
5	G	—	CABINET ASSY		1	(BG00T021B01)				
6	G	E17 018 500	SIROCCO FAN		1					
7	G	—	BELL MOUTH		1	(R302D730G01)				
8	G	E17 027 620	HEAT EXCHANGER		1					
9	G	—	AIR INTAKE DUCT FLANGE		1	(BB02R503G10)				
10	G	E17 226 300	INDOOR FAN MOTOR	PA6V205	1		MF			
11	G	E17 018 505	RUBBER MOUNT		2	2PCS/SET				
12	G	E17 018 700	DRAIN PAN		1					
13	G	—	FAN MOTOR LEG		1	(R302G070G01)				
14	G	—	MOTOR BEAM		1	(BA02L499G04)				

STRUCTURAL PARTS
PE-4EAK.TH PE-4EAK.TH-U



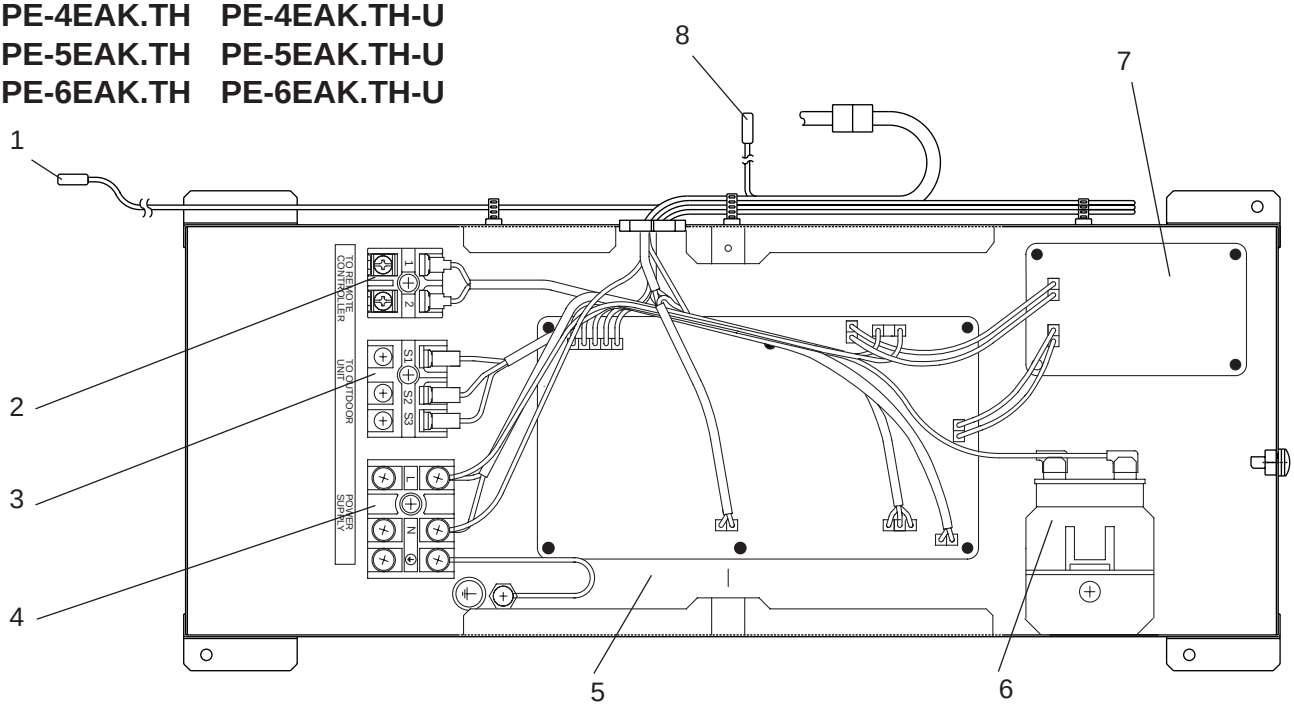
No.	RoHS	Part No.	Part Name	Specification	Q'ty/set	Remarks (Drawing No.)	Wiring Diagram symbol	Recommended Q'ty	Price	
					PE-4EAK.TH(-U)				Unit	Amount
1	G	—	AIR OUTLET DUCT FLANGE		1	(BA00H896G09)				
2	G	—	FAN PLATE		1	(BB02G686G05)				
3	G	E17 018 808	LEG		2					
4	G	—	CASING		1	(BA00N328G08)				
5	G	—	CABINET ASSY		1	(BG00T022B01)				
6	G	E17 022 500	SIROCCO FAN		1					
7	G	—	BELL MOUTH		1	(R302D730G01)				
8	G	E17 028 620	HEAT EXCHANGER		1					
9	G	—	AIR INTAKE DUCT FLANGE		1	(BB02G810G29)				
10	G	E17 227 300	INDOOR FAN MOTOR	PA6V305	1		MF			
11	G	E17 018 505	RUBBER MOUNT		2	2PCS/SET				
12	G	E17 022 700	DRAIN PAN		1					
13	G	—	FAN MOTOR LEG		1	(BB00L212G05)				
14	G	—	MOTOR BEAM		1	(BB02T248G02)				

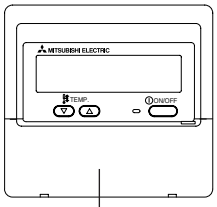
STRUCTURAL PARTS
PE-5EAK.TH PE-6EAK.TH
PE-5EAK.TH-U PE-6EAK.TH-U



No.	RoHS	Part No.	Part Name	Specification	Q'ty/set		Remarks (Drawing No.)	Wiring Diagram symbol	Recommended Q'ty	Price	
					PE-EAK.TH(-U)					Unit	Amount
					5	6					
1	G	—	AIR OUTLET DUCT FLANGE		1	1	(BA00H896G10)				
2	G	—	CASING		1	1	(R300B098F05)				
3	G	—	FAN PLATE		1	1	(BA02N472G05)				
4	G	—	MOTOR BEAM		1	1	(BB02L182G04)				
5	G	—	FAN MOTOR LEG		1	1	(BB00L212G05)				
6	G	E17 018 505	RUBBER MOUNT		2	2	2PCS/SET				
7	G	E17 228 300	INDOOR FAN MOTOR	PA6V400	1	1		MF			
8	G	—	CASING		1	1	(R300B098F04)				
9	G	—	CABINET ASSY		1	1	(BG00T022B04)				
10	G	E17 018 808	LEG		2	2					
11	G	E17 018 500	SIROCCO FAN		1	1					
12	G	—	BELL MOUTH		2	2	(R302D730G01)				
13	G	—	AIR INTAKE DUCT FLANGE		1	1	(BB02L116G27)				
14	G	E17 029 620	HEAT EXCHANGER		1						
	G	E17 030 620	HEAT EXCHANGER			1					
15	G	E17 023 500	SIROCCO FAN		1	1					
16	G	E17 023 700	DRAIN PAN		1	1					

ELECTRICAL PARTS
PE-3EAK.TH PE-3EAK.TH-U
PE-4EAK.TH PE-4EAK.TH-U
PE-5EAK.TH PE-5EAK.TH-U
PE-6EAK.TH PE-6EAK.TH-U





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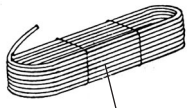

10

Part number that is circled is not shown in the figure.

No.	RoHS	Part No.	Part name	Specification	Q'ty/set PE-•EAK.TH(-U) 3	4	5	6	Remarks (Drawing No.)	Wiring Diagram Symbol	Recommended Q'ty	Price Unit	Amount
1	G	E17 136 308	ROOM TEMPERATURE THERMISTOR		1	1	1	1		TH1			
2	G	E17 156 375	TERMINAL BLOCK	2P(1, 2)	1	1	1	1		TB5			
3	G	E17 263 375	TERMINAL BLOCK	3P(1, 2, 3)	1	1	1	1		TB4			
4	G	E17 155 375	TERMINAL BLOCK	3P(L, N, ⏚)	1	1	1	1		TB2			
5	G	E17 226 447	INDOOR CONTROLLER BOARD		1	1	1	1		I.B			
6	G	E17 018 351	CAPACITOR (FAN MOTOR)	8.0μF / 440VAC	1	1	1	1		C			
7	G	E17 262 440	INDOOR POWER BOARD		1	1	1	1		P.B			
8	G	E17 240 307	PIPE TEMPERATURE THERMISTOR / LIQUID		1	1	1	1		TH2			
9	G	E17 159 426	REMOTE CONTROLLER		1	1	1	1		R.B			
10	G	E17 018 089	REMOTE CONTROLLER CABLE		1	1	1	1					
(11)	G	E17 250 382	FUSE	6.3A 250V	1	1	1	1		FUSE			

12 OPTIONAL PARTS

12-1. REFRIGERANT PIPES

Service Ref. : PE-3EAK.TH(-U)

Part No.	PAC-05FFS-E	PAC-07FFS-E	PAC-10FFS-E	PAC-15FFS-E
Pipe length	5m	7m	10m	15m
Pipe size O.D.	Liquid:ϕ9.52 Gas:ϕ15.88			
Connection method	Indoor unit:Flared Outdoor unit:Flared			

Service Ref. : PE-4EAK.TH(-U) PE-5EAK.TH(-U) PE-6EAK.TH(-U)

Part No.	PAC-SC51PI-E	PAC-SC52PI-E	PAC-SC53PI-E	PAC-SC54PI-E
Pipe length	5m	7m	10m	15m
Pipe size O.D.	Liquid:ϕ9.52 Gas:ϕ19.05			
Connection method	Indoor unit:Flared Outdoor unit:Flared			

Note 1. How to connect refrigerant pipes.
Factory supplied optional refrigerant pipings contain refrigerant at the above atmospheric pressures. As long as connection takes no more than 5 minutes, no air will enter, and there will be no need for air purging.
Remove the blind caps and make the connections within 5 minutes. After the connections for the indoor and outdoor units are made, open the stop valve on the outdoor unit to allow refrigerant gas to flow.
If piping length exceeds 20m, an additional charge of refrigerant in needed.

Note 2. The following main parts are contained in the optional refrigerant piping kit.
Heat insulating cover, vinyl tapes, nipples, sleeve and flange (for wall hole).

12-2. MULTIPLE REMOTE CONTROLLER ADAPTER

This adapter is needed for remote indication (operation/check).

Part No.	PAC-SA88HA-E
Applicable Service Ref.	PE-3/4/5/6EAK.TH(-U)

12-3. REMOTE ON/OFF ADAPTER

Part No.	PAC-SE55RA-E
Applicable Service Ref.	PE-3/4/5/6EAK.TH(-U)

12-4. REMOTE SENSOR

Part No.	PAC-SE41TS-E
Applicable Service Ref.	PE-3/4/5/6EAK.TH(-U)

12-5. REMOTE OPERATION ADAPTER

Part No.	PAC-SF40RM-E
Applicable Service Ref.	PE-3/4/5/6EAK.TH(-U)

12-6. WIRELESS REMOTE CONTROLLER

Part No.	PAR-SL97A-E
Applicable Service Ref.	PE-3/4/5/6EAK.TH(-U)

12-7. SIGNAL RECEIVER UNIT

Part No.	PAR-SA9CA-E
Applicable Service Ref.	PE-3/4/5/6EAK.TH(-U)

Mr.SLIM™

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